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New Book!—Hoffman's Endocrinology

Just Ready!—This *new* book is by Dr. Jacob Hoffman of Jefferson Medical College and Hospital, Philadelphia. Its full title is *Female Endocrinology, including Sections on the Male.* It was written not alone to record the great advances in endocrinology and their office and bedside practice, but even more to give all concerned with endocrinopathies a comprehensive, really sound and wholly impartial counsellor and guide that faces diagnostic and therapeutic problems objectively and with determination to clarify the virtues, dangers, possibilities and limitations of endocrine therapy.

Dr. Hoffman approaches endocrine disorders from the physiologic viewpoint. Consequently he first covers concisely the physiology of each endocrine gland, then goes thoroughly and specifically into the *clinical aspects*—symptoms, diagnosis and treatment. Because it is so important, Dr. Hoffman gives *Treatment* in great detail. He evaluates therapy with unusual clarity; he tells what treatment is indicated and why; stresses limitations of endocrine therapy and *lays great emphasis on the place and value of non-endocrine therapy.* Proper psychic management and the constitutional aspects and non-endocrine factors of endocrine disorders are carefully brought out.

Part III is devoted entirely to Laboratory Procedures—the technic of tests and what is especially essential, *the clinical interpretations of the findings.*

Full information is given on hormone preparations. There are nearly 200 outstanding illustrations.

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AN ARSENICAL WITH A BRILLIANT RECORD OF EFFECTIVENESS AND SAFETY

MAPHARSEN

PARKE, DAVIS & COMPANY, DETROIT, MICHIGAN

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INFLAMMATORY DISORDERS OF THE SKIN OF THE FEET

JOHN F. MADDEN, M.D.
ST. PAUL

The anatomic peculiarities of the feet, the fact that they are organs of locomotion and the fact that they are enclosed in shoes make the skin which covers them subject to certain diseases. This paper is part of a symposium on cutaneous disorders of the feet; so stress will be laid on conditions which occur on the feet alone, and little will be said about those in which the feet are involved as part of a disseminated process.

The diagnostic approach to cutaneous diseases of the feet should be made with an open mind. There is a tendency among both the public and doctors to call all diseases of the skin of the feet fungous infections. It is actually impossible to make a diagnosis of a fungous infection without microscopic studies of scrapings from the cutaneous lesions or from their contents. Often the aid of cultures is also necessary. Even if a fungus is found, it is often difficult to determine whether it is a saprophytic or a pathogenic organism. The public seems to have a preconceived idea that football coaches, athletic trainers and the like are capable of diagnosing and treating fungous infections, or "athlete's foot." This idea is readily accepted by the coaching fraternity. Some of the athletic instructors have even gone so far as to endorse certain compounds as cures for any and all inflammations of the feet. My associates and I seldom see high school students or college men who participate in athletics and have cutaneous disorders of the feet who have not been treated for various lengths of time by their coaches. Fewer diagnostic errors would be made if fungous infections were diagnosed as a last resort.

The examination of the feet is most important. It is absolutely necessary to examine both feet. The patient is often reluctant to take the covering off both feet, but this should be insisted on. The hands should also be examined, and if an eruption is present it is important to know whether the eruption started on the hands or on the feet. The skin should be examined at least up to the knee as well as the part covered by the eruption. All parts of the feet should be examined. The circulation, the shape of the feet and physical abnormalities should be noted. The webs of the toes, the nails and the paronychial tissues are to be carefully considered.

It is equally important to examine the footwear. Woolen socks are generally contraindicated in inflammatory conditions of the feet. They absorb and hold moisture and produce maceration of the inflamed skin. Cotton footwear is much less irritating. Shoes are to be examined for type and comfort as well as fit. Generally a comfortable shoe is a well fitted shoe. Perforated shoes and open toed shoes are far superior to the usual footwear when inflammation exists. They probably are preferable at all times, but certain occupations as well as the winter season make their general use impracticable. Thick soled shoes as well as rubber soled shoes are undesirable in the presence of inflammation because they increase perspiration and cause maceration. Thick soled or rubber soled shoes also cause inflammatory conditions by producing increased perspiration which results in maceration, and this in turn is followed by inflammation produced by the common saprophytic organisms on the feet. It is important to know how often the patient changes his shoes, how many shoes he has and whether he wears one pair for work and others when he is not working. Shoes should be changed frequently in the presence of inflammatory disease. Wet, soggy shoes always aggravate inflammatory conditions. The patient should have enough changes to allow the shoes to dry thoroughly before they are worn.

Certain occupations add to the hazards and often are predisposing causes of inflammatory conditions of the feet. This is especially true of butchers, workers in meat packing plants, butter makers and people who wear rubber boots or rubbers and stand in water or on a wet floor all day. When these people get inflammatory diseases of the feet it is usually necessary to have them stop work temporarily or change to another occupation. Oil soaked shoes worn in some occupations are aggravating factors in inflammations. This is especially true if the patient does not leave his work shoes at the plant but wears them walking around after work.

The general public is tempted to use all sorts of remedies because of persuasive newspaper and radio advertising. It should be obvious that a "cure all" does not exist. The type of treatment varies with the stage and the degree of each inflammation, with every case and with each recurrence in the same patient. Most of the remedies advertised are too strong for general use and add to the existing trouble. Home remedies such as tincture of iodine, gasoline and kerosene usually aggravate even the mildest inflammation. Soaking shoes in formaldehyde has caused many a sore foot and did not benefit or prevent cutaneous diseases of the feet. The most discussed and advertised use of equal parts of phenol and camphor has done a great deal of harm and has been said even to have caused gangrene in some instances. Generally foot powders are harmless even though they often are not beneficial.

The care of the feet and of footwear is important in preventing inflammations as well as in treating inflammatory disease. Shoes that rub, pinch or bind the

This paper, in a symposium on "Cutaneous Disorders of the Foot," is published under the auspices of the Section on Dermatology and Syphilology.

From the Ancker Hospital and the Division of Dermatology and Syphilology of the University of Minnesota Medical School, Dr. H. E. Michelson, director.

feet should not be worn. Shoes with run down or worn heels which place the feet in abnormal positions are harmful. The nails should be cleaned, cut and trimmed regularly. The feet should be bathed often and dried carefully. It is especially important to dry between the toes, where many inflammations start.

Constitutional factors also play an important part in inflammatory diseases of the skin of the feet. The circulation can and often does have a determining role in the effect of local treatment. The build and the weight of the patient have a definite effect on therapy. It is well known that obese people do not respond to local treatment as well as others. Sweat is an aggravating factor in some inflammatory conditions of the skin of the feet, especially contact dermatitis and fungous infections. The salt in sweat irritates open lesions, and often the eruption cannot be controlled during periods of excessive sweating. The seasons, emotional factors such as nervous exhaustion, worry and fright, and fatigue have an uncontrollable effect on sweating of the feet and secondarily on inflammations of the skin. Chronic inflammations of the feet usually become worse after excessive sweating in the spring, after alcoholic bouts and following periods of nervous exhaustion, over which local treatment has little if any control.

The inflammatory disorders of the skin of the feet to be discussed will be taken in the approximate order of their frequency and importance.

CONTACT DERMATITIS

Contact dermatitis usually appears on the dorsa or the sides of the feet and is rarely seen on the soles. The nails and the interdigital webs are seldom involved. The eruption may range from inflammatory weeping vesicles to diffuse dry scaling plaques. The location is quite the opposite of that of fungous infections. As in contact dermatitis elsewhere, the most prominent symptom is itching. This varies both with the patient and with the degree of inflammation. Swelling may be pronounced enough to prohibit the wearing of shoes. The usual causes of contact dermatitis are shoe dye, sock or stocking dye, leather or shoe polish. Dermatitis from poison ivy is frequently seen on the feet of bathers and children in the summer time. Leg makeup and nylon hose have caused a certain amount of contact dermatitis in recent years. Although nail polish is frequently worn, it seldom if ever causes dermatitis in this area. A careful history aided by patch tests or actually withdrawing and later wearing the suspected article will generally reveal the cause. It is important not to overtreat contact dermatitis. If the feet are swollen, wet packs of boric acid or a solution of aluminum acetate in addition to boric acid or warm water soaks two or three times a day can be used. The packs should be made of approximately twenty layers of washed surgical gauze and changed frequently. Rubber, oiled silk and other impermeable substances should not be applied on the outside of the pack because they defeat the purpose of the pack by prohibiting evaporation and causing maceration. Boric acid in a saturated solution should never be used because the boric acid crystallizes as the pack dries and the crystals mechanically irritate open lesions. After the edema has subsided, a paste consisting of 3 to 5 per cent ichthammol in paste of zinc oxide is applied. The patient is advised to wear perforated shoes for some time after the eruption has healed.

PYODERMA

When pyoderma is used in the broad sense meaning any pyogenic infection it designates a condition that is relatively common on the feet. Inflammations may start following injury from falling objects, shoe nails, stone bruises on bare feet, tight shoes, rubbing shoe heels, ingrown toe nails and many other causes. When the cause is removed, it often is not necessary to keep the patient off his feet. Warm water or boric acid soaks at intervals during the day and 5 per cent sulfathiazole ointment applied at night and between soaks usually are sufficient. For the more severe pyogenic infections rest in bed, elevation of the feet and wet packs of boric acid or of solution of aluminum acetate are applied until the patient becomes ambulant. Sulfathiazole is not given by mouth unless the infection is severe or accompanied by lymphangitis or lymphadenitis. The usual precautions against tetanus are taken when necessary.

Certain types of pyogenic infections deserve special mention. Ecthyma has been one of the most severe medical problems of the war in Africa. The British literature shows an astonishing number of articles under many different names devoted to ecthyma. It seems that the soldiers get indolent pyogenic ulcers following insect bites and other injuries which will not heal under conditions of desert warfare. The lack of bathing, the long marches and the ever present sand in the air are given as reasons why the lesions do not heal. Ecthyma as we see it in Minnesota usually responds promptly to 5 per cent sulfathiazole ointment. The addition of 3 per cent urea to sulfathiazole ointment seems to be beneficial.

Folliculitis due to oil is seen on the feet of mechanics, press workers, engineers and others who wear oil soaked shoes while working. The recurrence of such infections has become a real industrial problem because these people usually are skilled workers and cannot be shifted about. The patients are advised to change socks at least once a day, to bathe their feet twice daily, to change shoes every two or three days and to wear different shoes while working. Sulfathiazole ointment is used locally. If the eruption recurs, the usual protective creams are used.

Erysipelas, cellulitis, furunculosis and impetigo occasionally occur on the feet. The sulfonamide drugs are always administered cautiously by mouth and only when there are real indications. When sulfonamide drugs are given by mouth the urine and the blood are checked regularly and careful observations made for other toxic signs. It is rare to find a case of "sulfathiazole fast" impetigo contagiosa, although it is quite common to have sulfathiazole ointment cause contact dermatitis.

PARONYCHIA

Paronychia is usually due to pyogenic infection, fungous infection, psoriasis or syphilis. Paronychia caused by pyogenic organisms is generally secondary to ingrown toe nails. The cause is evident but the treatment is difficult. Often the outer third of the nail must be removed and the part then treated with wet packs and soaks in the manner previously stated. Pyogenic paronychia often is accompanied or followed by pyogenic granuloma which is not affected by local applications and must be destroyed by some type of cautery. Paronychia associated with psoriasis is really due to pyogenic organisms and is started by psoriatic distortion of the nail. The psoriatic nail is often benefited by superficial roentgen therapy, while the par-

onychia is treated as one of pyogenic origin. Syphilitic paronychia is not particularly distinctive but is usually accompanied by dactylitis, changes in the nail, and a positive serologic reaction.

PSORIASIS

When psoriatic lesions of the feet are part of a generalized eruption the diagnosis is simple. However, psoriasis may be confined to the soles or the nails for many years or a lifetime. The soles are dry, scaly and often fissured. There rarely is involvement of the interdigital webs as in fungous infections. The eruption is more diffuse than in the occupational keratodermas and usually starts in childhood or later life in contradistinction to the congenital keratodermas. Patients with diffuse papulosquamous syphilids generally show other signs of syphilis and have a positive serologic reaction. Squamous eczemas usually can be differentiated by biopsy. The nails are thickened, irregularly laminated, brittle and yellowish white. Psoriasis can be differentiated from fungous infections by direct and cultural examinations of scrapings. Arthropathic psoriasis is the name given to the association of polyarthritis and widespread psoriasis of which the involvement of the feet is only a part. Pustular psoriasis on the feet as elsewhere is a more acute phase of psoriasis vulgaris. Certain lesions of pustular psoriasis often subside or become typical lesions of psoriasis vulgaris; also the reverse is often seen. Psoriasis may involve the feet as part of a generalized exfoliative dermatitis and must be differentiated from exfoliations due to arsenical or other drugs, the lymphoblastomas, exfoliative seborrheic dermatitis and lichen planus. This usually can be done by means of a careful history, examination and biopsy. The cause of psoriasis is unknown, and the recent clinical investigations seem to have thrown little light on it.

The treatment of psoriasis has made little advance in many years. Innumerable remedies have been publicized in glowing reports only to be found wanting when checked by less enthusiastic investigators. I have conducted special psoriatic clinics at the Ancker Hospital and the University Hospitals for several years and have observed over 500 psoriatic patients. All the newer remedies and methods of treatment brought to my attention have been tried over long periods. Almost all remedies will help a small percentage of psoriatic patients, but no remedy will benefit all or even a sizable percentage. It is also interesting to note that in my experience most remedies will not take care of recurrences satisfactorily no matter how effective they were the first time. To my mind the Goeckerman tar and ultraviolet ray treatment for hospital patients and the usual topical applications for ambulant patients are still the most satisfactory. It is well to warn that repeated roentgen therapy to the soles is harmful and probably should never be used.

Since my last report a number of remedies have been used because of their reported successful effect on psoriasis. Soybean lecithin given in capsules and in cookies, eosin used locally in lotions and ointments, parathyroid injection subcutaneously, Honduran sarsaparilla in tablet form by mouth, and pancreatin in tablet form given by mouth were all tried over a period of months, and they did not cure psoriasis. Of the aforenamed remedies pancreatin in 5 grain (0.32 Gm.) tablets given four times daily by mouth combined with a scaling ointment seemed to be the most satisfactory.

DISTURBANCES OF THE SWEAT GLANDS

Hyperhidrosis is often accompanied by a certain amount of inflammatory change in the skin. It often paves the way for more serious conditions as well as aggravating existing inflammatory diseases. Hyperhidrosis may be caused by a disease of the thyroid gland, obesity, tuberculosis, chronic alcoholism, emotional disturbances and many other diseases. The cause should be removed when possible. Careful drying of the feet, frequent bathing, avoiding wool socks, changing shoes and socks daily, allowing shoes to dry thoroughly before wearing, avoiding thick soled or rubber soled shoes, wearing perforated shoes, using a harmless dusting powder in the footwear and applying an aqueous solution of 15 per cent aluminum chloride are helpful. Here again repeated roentgen therapy should be used cautiously.

Bromidrosis can be described as hyperhidrosis with an odor. The causes and the treatment of the two are essentially the same.

Dyshidrosis is an acute or subacute inflammatory condition occurring on the hands and the feet. The lesions occur on the soles and the interdigital webs. The eruption appears as deep seated solitary vesicles which itch intensely. The lesions later rupture and scale or they may coalesce and form clusters. The degree and the signs of inflammation vary. The eruption often becomes pustular, and it may be a forerunner of fungous infections or pyodermas. Dyshidrosis is less frequent and less severe on the feet. It has a tendency to recur repeatedly. In my experience the eruption frequently follows periods of overwork, nervous exhaustion or emotional disturbance and is often accompanied by hyperhidrosis. Treatment is directed toward correction of the general disturbance when one exists, use of the same drying measures as mentioned for hyperhidrosis and use of local applications. The use of 3 to 5 per cent salicylic acid and 3 to 5 per cent benzoic acid in paste of zinc oxide often gives satisfactory results.

LICHEN SIMPLEX CHRONICUS

Lichen simplex chronicus occurs on the dorsa of the feet and at the instep from ill fitted shoes and other causes. It is not always localized neurodermatitis. In some cases it is due to purely mechanical irritation by a foreign object on the skin and will disappear with little or no treatment when the offending object is removed. I have observed this several times when trusses were removed following operation for hernias. Lichen simplex chronicus is a circumscribed patch of chronic inflammation characterized by thickening of the skin, a dull red color, accentuation of the lines of cleavage and presence of excoriations. If the cause can be removed the disease often responds to fractional doses of roentgen rays plus a local application of 1 to 5 per cent crude coal tar in paste of zinc oxide. A recent favorite application of mine obtained indirectly from Dr. J. B. Shelmire of Dallas, Texas, is salicylic acid 0.5 Gm., mercuric salicylate 1 Gm., oil of eucalyptus 1 Gm., bismuth subnitrate 2 Gm., hydrous wool fat 15 Gm. and white petrolatum 15 Gm.

PERSISTENT ERYTHEMA OF PALMS AND SOLES

Persistent erythema of the palms and soles is much more common than is generally known. Little attention is paid to the eruption because it is often asymptomatic. It usually occurs over the points of pressure on the feet and remains for months or years. Some-

times there is an accompanying hyperhidrosis, and at times the feet itch or burn. There are constantly patients with this eruption in the wards for tuberculosis at the Ancker Hospital. I have seen as many as 10 of 150 tuberculous patients with it. The significance of the erythma was never determined but it was not seen in patients who did not have tuberculosis. Several biopsies were made and no abnormalities were noted. Fractional doses of roentgen rays, drying and scaling ointments and lotions, as well as other applications, did not affect the eruption. A recent article by Nelson [1] may be a step further in the foregoing description and might show the different findings in ambulant patients in his group and bed patients in mine. However, the uniform favorable response of Nelson's patients to treatment leads me to believe that we are not discussing the same disease.

RADIODERMATITIS

Radiodermatitis is all too common on the feet. It generally follows treatment for one of the common recurrent cutaneous eruptions, such as psoriasis and fungous infections, or treatment for plantar warts. Chronic radiodermatitis is usually found on the feet, and it appears in the form of atrophy, hyperpigmentation or depigmentation associated with telangiectasia. This is particularly dangerous on the feet because of the constant trauma and possible development of cancer. When radiodermatitis is present, the feet need especially good care and careful observation at regular intervals. The possibility of cancer should always be kept in mind when the slightest roughening of the surface or ulceration appears. Cancers in radiodermatitis in this location are usually intensely malignant and require immediate attention if cure is to be had.

URTICARIA

The feet may be the only site of urticaria. The lesions usually occur on the soles and itch annoyingly. The eruption may be caused by any of the many recognized causes, but often there is a particular type spoken of by the French as "fatigue urticaria." At the time of emotional stress or nervous exhaustion the feet will develop urticarial lesions and itch intensely. This continues until the emotional wrong has been righted, in spite of the use of the usual helpful medicaments, such as epinephrine or ephedrine.

GRANULOMA ANNULARE

Granuloma annulare often occurs about the ankles and on the dorsa of the feet. The lesions consist of deeply seated papules which are elevated, firm, vary from the color of normal skin to bluish red and generally form a ring. There are seldom more than one or two ringed lesions on a foot. The lesions usually develop slowly and persist for months or years. They may involute partially and leave single papules or segments of the ring. They are usually comparatively painless. Opinion is divided as to whether the eruption is of tuberculous origin. The disease may be differentiated from erythema elevatum diutinum, erythema multiforme, necrobiosis lipoidica diabeticorum, annular sarcoid and rheumatic nodules. Solidified carbon dioxide and radiotherapy are sometimes used satisfactorily. Occasionally a lesion will disappear following biopsy, but often any treatment is ineffective. Granuloma annulare generally involutes without sequelae.

1. Nelson, L. M.: Symmetric Lividity of the Soles, Arch. Dermat. & Syph. **47**: 822-825 (June) 1943.

ACRODERMATITIS PERSTANS

Acrodermatitis perstans is a comparatively rare disease of the skin of the feet. It is a chronic infectious dermatitis which usually begins in the region of the nail and spreads slowly from that point. The initial lesions are vesicular or pustular. Later the nails are thickened and may be destroyed. The pustules recur and rupture, and the involved part is covered with crusts. The hands are more commonly the site, but the disease may involve all parts of the skin and mucous membranes. Acrodermatitis perstans is confused with infectious eczematoid dermatitis and pustular psoriasis. Local antiseptic applications are used but often are of little value.

PUSTULAR BACTERID

Pustular bacterids are described by several authors, but I have never seen a case with all the classic findings, so have never made such a diagnosis. The eruption is discussed in detail by Andrews.[2] The following lines are direct quotations from his book: The disease usually begins on the midportions of the soles, the characteristic lesions are pustules, the histology is distinctive and the distinguishing facts concerning pustular bacterids are (1) the presence of skin lesions that have a proved relationship to a focus of infection, sometimes accompanied by leukocytosis, (2) positive allergic skin reactions to streptococcus and staphylococcus, (3) consistently sterile cultures from skin lesions, (4) cure by removal of the focus of infection and (5) uniform histopathology similar to that of trichophytid. The treatment of pustular bacterid is chiefly the problem of eliminating all foci of infection. Locally, wet dressings of solution of aluminum acetate diluted 1:4 give the best results.

AINHUM

Ainhum is a rare disease seen chiefly among Negroes. It affects any of the digits but most frequently the little toe. A shallow groove is formed on the digitoplantar web, which spreads and encircles the digit. This constricting fibrous ring tightens and in time amputates the toe. In early stages the digit can be saved by severing the constricting ring.

INFLAMMATORY DISORDERS OF THE SKIN OF THE FEET CONSTITUTING PART OF A DISSEMINATED ERUPTION

Erythema multiforme is commonly seen on the dorsa of the feet as well as on the backs of the hands and on mucous membranes. It is a disease of multiple causes, among which are drugs and allergens. When the cause is removed the disease disappears promptly, but in the as yet idiopathic group small doses of neoarsphenamine, 0.3 Gm. given every three to five days, are often of distinct value.

Pellagra shows cutaneous as well as gastrointestinal and nervous system signs. The skin of the feet is less severely and less often involved than that of the hands, face and neck. When dermatitis occurs it appears as an erythema on the dorsa of the feet and about the ankles. This is followed by edema, hyperpigmentation and desquamation in the late stages, which results in dry, parchment-like hyperpigmented skin. Vitamin B complex combined with a diet rich in pellagra preventive foods is specific if the illness is not so far advanced that the patient cannot take the treatment. A lubricating cream makes the skin more comfortable.

The soles are frequently the sites of scabetic lesions in babies and small children. This fact is often over-

2. Andrews, G. C.: Diseases of the Skin, ed. 2, Philadelphia, W. B. Saunders Company, 1938.

looked and an error in diagnosis made because the lesions are thought to be out of place. Scabies is one of the most perplexing cutaneous problems of the war. British literature since the war shows a huge increase in the number of articles on this disease. Many new and ingenious treatments have been tried. The overnight cures for scabies are generally unsatisfactory. Benzyl benzoate has proved most satisfactory in the British army and among English civilians during the war. It was given a fair trial at the Ancker Hospital and found less satisfactory than the compound ointment of sulfur which had been used for many years.

The feet are involved in many drug eruptions. They are affected in the exfoliative dermatitis caused by arsenic compounds, gold compounds and the barbiturates as well as in the erythema, urticaria and exanthems produced by acetophenetidin, quinine and other drugs; also in the pustular eruptions following the use of iodides and bromides.

Fixed drug eruptions may occur on the feet. These are caused chiefly by phenolphthalein, arsenic compounds, gold compounds and the barbiturates. The eruption appears as solitary or multiple patches of erythema or inflammation shortly after the drugs are taken. The lesions subside after each dose unless the drug is taken continuously. There is a distinct flare-up when the drug is taken again. As a rule each recurrence is more pronounced unless the dose is greatly reduced. Recurrences take place in the same spots, and new lesions appear as time goes on. The older lesions remain as brown pigmented patches long after the causative drug has been stopped, but the gross inflammatory signs disappear promptly when the drug is withdrawn.

Lichen planus is seen about the ankles, soles and dorsa of the feet. Here as elsewhere it is one of the most refractory diseases of the skin to treat. Fractional doses of superficial roentgen rays accompanied by intramuscular injections of 1/6 grain (0.011 Gm.) of mercuric succinimide at weekly intervals are among the more helpful remedies.

Changes from erythema to gangrene can occur in several systemic diseases such as diabetes, syringomyelia and other diseases of the spinal cord. Ulcers occur on the feet in sickle cell anemia. No attempt will be made to discuss these changes here, but it should always be kept in mind that if the cause of an inflammatory condition of the feet is not specifically determined a general physical and laboratory examination must be done.

Certain dermatoses which are comparatively common elsewhere, such as dermatitis factitia and herpes simplex, can occur on the feet.

Some uncommon or rare diseases, such as necrobiosis lipoidica diabeticorum, creeping eruption, schistosomal infections and the lymphoblastomas, may be represented by lesions on the feet.

Epidermolysis bullosa is a rare cutaneous disease in which vesicles or bullae are produced by slight trauma on the feet as well as other parts of the body.

Eczema of the feet is usually part of a local or generalized contact dermatitis or part of atopic eczema. The lesions vary from vesicles to scalping plaques accompanied by deep painful fissues. A discussion of eczema to be of any value would be too long for this paper.

Erythredema polyneuropathy (acrodynia) is manifested in swollen, pink feet, the skin of which later desquamates, and may appear as a vesicular dermatitis.

The exanthems scarlet fever, smallpox, chickenpox and vaccinia produce familiar lesions on the feet.

The chronic infectious granulomas syphilis, tuberculosis and leprosy all can appear on the feet in their many forms. Tuberculosis is probably limited to papulonecrotic tuberculids and the primary complex on the skin of the feet.

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CUTANEOUS MANIFESTATIONS OF THE CIRCULATORY DISORDERS OF THE FOOT

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The most important cutaneous manifestations that occur on the foot in association with circulatory disorders are those which occur with peripheral vascular disease. In the past two decades the study of peripheral vascular disease has made great progress, and many physicians and clinics devote most of their time to the study of such diseases. The sources for this dissertation are several: standard textbooks on dermatology, books on peripheral vascular disease, other medical literature and the personal experience of the author and his colleagues who have a special interest in this phase of medicine. Specific statements in the literature or authorities will not be cited, and no attempt will be made to cover this vast field completely.

ARTERIOSCLEROSIS OBLITERANS

While arteriosclerosis occurs in both sexes, symptoms and signs of obliteration of arteries in the lower extremities occur almost always in men past the age of 55. The commonest symptom arises from intermittent claudication and consists of pain on exercise which disappears on resting. Pain during rest is not usually severe but there may be other sensations in the foot, such as coldness, paresthesia, "pins and needles" sensation and formication.

Local signs of vascular deficiency on the skin of the feet are the rule. Failure of the feet to sweat and loss of lanugo hairs over the toes are early signs of occlusive vascular disease. The nails may be atrophic and brittle, or they may be thickened and horny; corns and calluses may develop or may become much thickened.

Most important for diagnosis is the condition of the minute vessels of the skin as evidenced by the color of the skin. A purple-red color on dependence is the most important sign of arterial circulatory deficiency, which may indicate a compensatory dilatation of superficial vessels to make up for partial closure of the large vessels. The redness consists of a flush involving the sole of the foot, extending up the sides to some degree, and involving the dorsa of the toes and adjacent parts of the foot.

Blanching of the foot on elevation to the perpendicular is also present. The rapidity with which this blanching occurs is often an indication of the severity of the arterial deficiency. Return of normal pinkness as the foot is depressed to the horizontal also may indicate the degree of insufficiency; the more nearly horizontal the leg is when pinkness returns the greater the insufficiency. A

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similar and probably more accurate estimation of arterial deficiency can be made by having the patient alternately flex and extend the toes; rapid blanching with slow return of the normal pink color is present in occlusive vascular disease.

If the deficiency has attained the level of producing clinical symptoms, then the superficial pulses of the dorsalis pedis and posterior tibial arteries are usually absent or much decreased. At room temperature there is decrease in the surface temperature of the affected foot. X-ray examination using soft tissue technic may show calcification of arteries, but negative findings do not exclude occlusive disease, and presence of calcified vessels does not necessarily indicate vascular deficiency. Oscillometric readings give reliable information as to the status of the arterial supply. The equipment does not cost much more than a good sphygmomanometer, and the method of use is now such that the average physician can employ it effectively. Other tests, suitable only for those specially interested in peripheral vascular disease, have been devised to determine the degree and the amount of vascular closure.

The foot with deficient arterial circulation is much more severely affected by slight trauma or infection than the normal foot, so that apparently minor conditions may be extremely serious. Minor blisters, abrasions, ingrowing nails, corns, calluses, fungous infections and other simple disorders may be the source of intractable infection or even gangrene. All these conditions should be prevented or if present should be treated conservatively and carefully.

Gangrene is the most serious event which can occur in the foot with deficient arterial circulation. It may start as a dry gangrene involving the distal parts, most commonly the tips of the toes, particularly the great toe, and be progressive even to involving much of the foot. Moist gangrene is usually the result of infection of a preceding lesion, such as an ingrowing toe nail, a blister, a corn or a callus. It is often preceded by more intense vascular phenomena plus the signs of inflammation, and it spreads more rapidly than the dry type. Ulcers of the mal perforans type with much destruction of the deeper tissue are apt to occur on the sole, particularly near calluses. The ulcer externally may be evidenced only by a fissure or a small granulation, while x-ray examination may show massive destruction of bone. In patients who are confined to bed decubitus ulcers on the heels are common unless precautions are taken to avoid them.

The older person with diabetes is prone to sclerosis of the arteries and subsequent damage to the foot which is in no way different from arteriosclerosis obliterans. In the diabetic patient the conditions are apt to be more serious.

THROMBOANGIITIS OBLITERANS

Thromboangiitis obliterans is an obliterative arterial disease of unknown cause in which there are often superficial migratory phlebitis and vasospastic phenomena associated with the inflammatory thrombosis. It occurs at ages from 25 to 45, almost exclusively in men, and affects predominantly the Jewish race. Pain from intermittent claudication is common and severe. Other types of pain also occur with exercise, and pain during rest is often present and may be severe.

Signs of vascular disturbance on the feet are more pronounced than in arteriosclerosis. There is rubor which may be very intense on dependence, extending onto the top of the foot, the toes and the sides. Ischemia on elevation also occurs. In some patients there is vasospasm followed by dilatation and cyanosis on exposure to cold. On examination there is usually a decrease or an absence of pulse in the superficial arteries of the foot and frequently in the arteries at the wrist. The surface temperature is reduced. Trophic disturbances of the skin, disturbances of the nails, calluses, blisters and other findings similar to those discussed in arteriosclerosis obliterans are usually present. Gangrene is common in the later stages and usually involves the toes and follows one of the aforementioned conditions, occurring particularly after the formation of a blister or about a corn or an ingrowing nail.

The treatment of arterial occlusive diseases of the extremities has made great progress in the past several years. Prophylactic care of the feet in the early stages may prevent one of the more serious sequelae. Well fitting stockings of cotton or thin wool and properly fitted shoes of soft leather are the first essentials. The feet may be washed as often as required but not more than once a day with a mild soap and warm water. They should be dried gently and carefully. If the skin is dry a vegetable cooking oil may be rubbed into it. Nails should be trimmed with care not to injure the skin and should be cut straight across. Ingrowing nails should be treated by a physician. Corns and calluses should be treated with respect, and salicylic acid plasters should not be used. Any blister, bruise, cut or injury should be treated carefully and conservatively. Exposure of the feet to cold should be avoided, as should also all constrictions of the legs, such as garters. Excessive standing, sitting with legs crossed and exercise which causes pain should be eliminated. External heat from lights or hot water bags had best be avoided, as it may cause trouble by increasing the metabolism of the part without adding to the blood supply. Bed stockings may be used to help cold feet. Midday rest with feet slightly elevated or mild exercises of the type described in the following paragraph are often helpful in aiding the circulation.

More active treatment may be carried out if the symptoms warrant it or if a minor complication is anticipated. Rest in a horizontal position requires less peripheral circulation and is helpful. Vascular exercises done as follows in each of three positions will aid in establishing collateral circulation: The feet are plantar flexed, then dorsiflexed, the toes are turned inward and then outward; then the toes are spread widely, then closed. This exercise is carried out (1) with the feet on a board at an angle of 30 degrees or less above the horizontal for two minutes, (2) with the feet hanging over the edge of the bed for three minutes and (3) with the feet horizontal and covered with bed clothes for five minutes. Up to three sessions a day of such exercises may be carried out.

More or less elaborate apparatus can also be used. Among them is one by which alternate suction and pressure can be exerted on the foot enclosed in a glass boot for periods of an hour or more and a total of one hundred hours. This procedure under the designation passive vascular exercise was popular several years ago. Periodic venous occlusion by means of an inflatable cuff similar to that used for taking blood pressure has also been used, but the apparatus is not simple. Passive exercise produced by means of an oscillating bed is one of the best methods, but the bed is expensive.

Heat used with caution and applied usually to adjacent areas rather than to the affected leg and foot is useful. It may be obtained by hot sitz baths, short wave diathermy to the pelvic region or the application of heat to an uninvolved leg. Heat over 94 F. is probably harmful to an affected leg.

Drugs which act as vasodilators may be helpful. Among these are alcohol, sodium nitrite or erythrol tetranitrate, papaverine hydrochloride intravenously several times a day and drugs of the xanthine type.

Elevating the temperature by means of typhoid vaccine in doses of 25 million killed organisms given intravenously at intervals of several days to a week or more may improve the circulation. The intravenous injection of 2 to 5 per cent sodium chloride solution in amounts of 250 cc. three times a week for months has been used in the therapy of thromboangiitis obliterans. Iontophoresis with mecholyl chloride or histamine, which produce vasodilatation, has also been used.

In the presence of gangrene amputation will usually be necessary, and it may be difficult to decide the level at which it should be performed. Amputation of digits or of a part of the foot is apt to require reamputation. Recently refrigeration of the extremity has controlled infection and made a most satisfactory anesthesia for amputation; it allows the surgeon to pick the optimal time for amputation.

ACROCYANOSIS, CHILBLAIN CIRCULATION, PERNIO, ERYTHROCYANOSIS CRURUM PUELLARIS

The disorders thus grouped, probably essentially the same except for the degree of involvement, have in common mottled cyanosis of the extremities, lowering of the surface temperature, aggravation of symptoms during cold weather and susceptibility to certain more definite clinical syndromes. Disorders of this type are much more common in women and are particularly evident in adolescent girls. The purple-red mottling is caused by stasis of blood and loss of oxygen from the blood in the capillaries and the venules of the skin. The pattern is caused by the arborizations of the capillary supply of the skin. There is probably a large element of vasospasm in the cause of the condition but in the more advanced or complicated forms there is added vascular inflammation with stasis, giving rise to indefinite infiltrated plaques, superficial ulceration and other lesions.

The diagnosis of this condition is not difficult. The feet are cold and clammy with cold perspiration, and the skin may be macerated from the sweating. The purple mottling with occasional white areas, aggravated by cold, is distinctive. The legs, hands, arms, nose and ears are usually the sites of similar circulatory changes.

Patients with these disorders are reputed to be more susceptible to other conditions, such as erythema induratum, lupus pernio, other inflammatory lesions of the legs occurring in winter, neurocirculatory asthenia, chronic rheumatoid arthritis and probably some forms of mental disease. Whether livedo reticularis should be considered as an advanced or severe form of one of the aforenamed disorders or a separate condition is difficult to say. In this disorder the purplish mottling follows a larger pattern, areas of livedo are more prominent and small superficial dry gangrenous ulcers of the legs and toes may occur.

Chilblains, or perniones, are painful or burning indurated reddish purple swellings that on the feet may be located over the toes, on the plantar surfaces, especially the heels, but not on the insteps. They may occur in normal persons who are exposed to damp cold over long periods or they may occur as a result of frostbite. They occur often in patients with acrocyanosis even though exposure to cold is minimal. The lesions usually disappear in summer and return in the fall with the onset of cold weather. They may become semipermanent in some, particularly if there is a background of infection such as tuberculosis. Similar lesions occur on the hands, the nose and the ears in the same type of person.

The treatment of the disorders grouped as acrocyanosis consists chiefly in the avoiding of exposure to cold, particularly damp cold. Warm stockings and loose fitting soft shoes should be worn. Excessive perspiration may be guarded against somewhat by soaking the feet in warm potassium permanganate solution of a strength of 1:1,500. Aluminum chloride in a concentration up to 25 per cent painted on the sweating areas one night a week frequently decreases the perspiration considerably. X-rays should not be used, as damage to the skin occurs before permanent decrease of sweating does. In the severe forms with excessive cyanosis, areas of ulceration or other complications of a vasospastic nature, lumbar sympathectomy may be necessary.

RAYNAUD'S SYNDROME

Raynaud's syndrome is a vasospastic disorder without vascular occlusion characterized by vasomotor phenomena of the extremities, superficial dry gangrene and trophic disturbances, with fairly characteristic findings in the capillary bed. Over 95 per cent of the patients are women, mostly in the age group of 17 to 35.

The vasomotor signs are the essential feature of the syndrome. Rather suddenly, precipitated by cold or emotional disturbances, the tips of the digits become pale and exsanguinated. In the beginning of the attack the spasm of the vessels is intermittent and can be seen best in the finger nails, where there will be alternate waves of whiteness and pinkness of the nails, but when the digits become bloodless the nails are similarly affected. The phase of local syncope is followed after a period by a cyanotic phase that appears slowly and lasts longer. The digit affected becomes gradually bluish, then purplish and finally blue-black. After some time the normal color returns. If the condition is on the feet not all the toes may be affected, and one digit may be in the phase of syncope while others may be cyanotic. There are subjective sensations which vary from itching, burning and other minor sensations to excruciating pain during an attack. Usually the hands are more severely affected than the feet.

The phase of trophic disturbances does not appear in all cases. It affects the extremity of the involved digit. After a severe attack of syncope or repeated minor attacks a small phlyctenular blister appears on the most distal part of the digit; this is followed by a small painful necrotic ulcer, which is usually dry and heals slowly, leaving a slight scar. After repeated episodes of superficial gangrene there is a loss of substance of the tip which may involve the bone of the terminal phalanx. Changes in the nail, both hypertrophic and atrophic, are the rule, and the nail grows over the end of the affected digit. The skin may be atrophic, thin and shiny or in a few it may become infiltrated and sclerodermatous. Extensive gangrene is uncommon but may occur.

The surface temperature of the extremity is lowered, and cold clammy perspiration is usually present. The superficial pulses are normal, but microscopic study of the capillaries of the nail fold may demonstrate a spasm of the vessels fairly diagnostic of Raynaud's syndrome.

Acrosclerosis (sclerodactylia, scleroderma with sclerodactylia) has been definitely separated from the group of diffuse sclerodermas as a different type of cutaneous sclerosis. In this disorder there are for a long time signs of acroasphyxia of the Raynaud type on the extremities. As in Raynaud's syndrome the hands are

worse and more often affected than the feet. Following the vascular symptoms there is sclerosis of the skin and underlying tissues involving first the digits and then gradually the feet and legs, the hands and the arms. The face, the upper part of the chest and the back are also involved in the sclerotic process. Atrophic changes, loss of distal phalanges, changes in the nails, necrosis and occasionally local calcification occur. Acrosclerosis cannot always be differentiated from Raynaud's syndrome with secondary sclerosis of the cutaneous tissues.

Treatment of Raynaud's disease and acrosclerosis is unsatisfactory. Avoidance of exposure to cold is most important, and it may be advisable for the patient to move to an equable warm dry climate. Vasodilatation obtained by means of drugs such as nitrites or papaverine hydrochloride may help. External heat of moderate degrees and light massage may aid. Iontophoresis of mecholyl chloride has been suggested as one of the best therapies. Lumbar sympathectomy offers a possibility of relief that may be permanent. It should be done before permanent damage has taken place. In late stages of Raynaud's disease and in acrosclerosis it is of little value.

ERYTHROMELALGIA

Erythromelalgia is a disorder of the extremities characterized by redness, increased surface temperature and pain. It involves the feet more often and more severely than the hands. An attack is provoked when the surface temperature reaches a critical level, though there are other factors, such as dependence, which also have an effect. A burning, sticking, prickling type of pain is constantly present. The surface temperature is elevated and the foot is red because of the vasodilatation, which is of the active type. The more distal areas of the foot, such as the toes or the heel, are most involved and there may be swelling, but only rarely are there trophic changes.

On examination the increased heat and redness are evident and the pulses are full and bounding. These findings serve to distinguish this disorder from occlusive arterial disease of Raynaud's syndrome. Owing to redness, swelling and pain in attacks, gout must be first considered in differential diagnosis. Treatment is not satisfactory. Heat and dependence should be avoided. Acetylsalicylic acid may control the symptoms.

IMMERSION FOOT, TRENCH FOOT, SHELTER FOOT

Prolonged refrigeration at temperatures near freezing and dependence of the feet, which are frequently wet and encased in tight coverings, give rise to serious vasomotor damage in the foot. In this war the condition occurs mostly in those torpedoed in the north Atlantic; in the first world war it occurred in men standing in damp trenches—circumstances which have given the aforestated popular names to the syndrome.

When the affected person is taken from the lifeboat the feet are cold, swollen and white, with scattered cyanotic areas. The feet are numb and heavy and are anesthetic to pain, touch and changes of temperature. If the feet are allowed to "thaw," there is rapid development of swelling and the feet become red and hot. The peripheral parts become swollen and livid, and, as the condition progresses, blisters, filled either with clear or bloody fluid, and gangrene may be imminent. In severe involvements gangrene occurs soon after thawing, but the minor ones may show only slight redness, edema and slight sensory changes. Because of damage to the sympathetic and other nerves, there is no sweating of the affected feet, and this may account for the redness, heat and rapid swelling that occur with quick thawing.

The greatest progress in the treatment of this condition has been the demonstration that surrounding the limb with ice or keeping it cold by other methods will prevent serious damage except in severe types. In the first aid stage care in removing the patient to a hospital and avoidance of heat and dependence of the foot are extremely important. Refrigeration of the elevated leg relieves the pain and prevents swelling and blister formation. It may need to be kept up for a week or longer.

Following recovery from the acute phases pain, redness, edema and other manifestations of a circulatory disturbance often persist, and troublesome neuritis often occurs.

Severe or mild repeated frostbite of civilians is in essence no different from immersion foot. In northern climates the layman has for years carried out refrigeration for minor frostbite. It is interesting to see that this treatment is equally effective in severe frostbite.

Late changes following frostbite, particularly such severe ones as gangrene, may not be caused by the freezing itself but may be due to the activation of arteriosclerotic occlusive disease or thromboangiitis obliterans in a person with subclinical manifestations. Intolerance of cold, chilblains and mild vasomotor changes of the feet are common after-effects of freezing and persist for years.

VASCULAR ANOMALIES

Port wine or capillary angioma occurs on the foot, usually as part of an extensive port wine mark. The involved skin, apparently normal except for the purplish color and possibly slightly increased surface temperature, is easy to recognize. Occasionally angioma of this type is part of an extensive deep vascular nevus. No treatment of capillary angioma is effective.

Spider nevus is found on the foot, where it may be multiple. The central capillary with radial spokes is characteristic. Fulguration or closure of the central vessel with a galvanic current is usually successful.

Small cavernous angiomas similar to the mulberry marks found so commonly elsewhere also occur on the foot and toes. They appear as pea to quarter size (24 mm.) localized vascular lesions. The small ones are successfully treated with solid carbon dioxide; the larger ones require irradiation with x-rays or radium.

A cavernous angioma with or without port wine elements may be of large size on an extremity. Often such an angioma allows short circuiting of the arterial blood to the veins. In such cases there are frequently overgrowth of the extremity, increased surface temperature, arterial blood in the veins, which may pulsate, and even cardiac signs of the shunting of the blood. Cirsoid aneurysm is somewhat of this type. A large angioma may require operative removal or even amputation if arteriovenous communications are numerous.

Lymphangioma may be of the circumscribed type which presents itself as a localized area of pseudovesicle formation, frequently in an elevated verruca-like area. If the skin over the lymphangioma is broken, lymph may ooze for a long time. Local destructive procedures, such as biterminal diathermy or cautery, give good results.

Diffuse lymphangiomatosis of the leg and foot is not common but is serious because of the increase in size of the extremity and the proliferation of interstitial tissue giving rise to deformity. Local gigantism may also be present here. Treatment is not satisfactory.

University Hospitals.

FUNGOUS INFECTIONS OF THE FOOT

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The modern habit of wearing shoes that encase the foot has endowed the surface of the foot with the warmth and moisture that make it an excellent culture medium for the growth of fungi. Pathogenic fungi have no doubt always made the foot a site for various cutaneous infections, but it is only in recent years that such infections have attracted dermatologic interest. Ormsby and Mitchell [1] in 1916 made the first comprehensive report in the United States of a large series of cases in which fungi were demonstrated microscopically. Since then fungous infections of the foot have increased to become among the most common cutaneous disorders. Direct microscopic examination of scrapings and the use of cultural methods for demonstrating the presence of fungi have made it possible to recognize many cases that might otherwise have been misplaced under some other diagnosis. Unquestionably, however, there must in addition have been a tremendous increase in the actual incidence of cases. The mobilization of millions of men incident to World War I inadvertently distributed many cases of fungous infections among the various camps and training centers. These cases acted as reservoirs from which the infections spread to great numbers of previously uninfected feet. Demobilization was followed by the dissemination of pathogenic fungi by the men returning home, and fungous infections of the foot have remained endemic in all parts of the United States since that time.

THE SUPERFICIAL MYCOSES

Dermatophytosis.—The most common fungous infection of the foot is that caused by the many species of ringworm fungus and described under many names, such as tinea, eczematoid ringworm, epidermophytosis, epidermomycosis and trichophytosis, all of which may comprehensively be designated by the term dermatophytosis.

Many genera and species of fungi may produce dermatophytosis. Weidman [2] in 1926 listed the geographic distribution of cases and showed that different fungi predominate as the etiologic agents in different parts of the world. According to Lewis and Hopper [3] Trichophyton gypseum and Trichophyton purpureum are the most frequently reported causative fungi at present, while Epidermophyton inguinale and other fungi are found less often. Not only do fungi vary in their geographic distribution from year to year, but they may also show great differences in virulence at various times.

The disease may appear at any age, but it is seen relatively seldom in children. Men have been affected more often than women, but this is probably the result of factors which may operate less often in the future. Because of mobilization in army camps and greater tendency to visit gymnasiums and swimming pools, men more often than women have in the past been exposed to infection. Woman's increasing role in industrial activities and in the prosecution of the war should do much, however, to afford her an equal opportunity for such exposure. It remains for the future to prove whether men are actually more susceptible to infection.

The infection may appear on a previously healthy skin, either with or without a preceding injury. Contact with material contaminated with fungi, such as socks, shoe leather, bath mats or wet floors, often precedes the infection. A certain predisposition to the disease, however, must play an important role, for, as White [4] pointed out and as has recently been shown in a statistical study by Sulzberger and his co-workers,[5] conjugal and familial transmission of the infection is uncommon. In most cases the patient carries his own dormant reservoir of fungi somewhere on the foot, and when his general resistance is lowered or the local conditions on the foot become optimum for the growth of fungi an active infection may flare up. Cases of dermatophytosis of the foot are seen through all seasons of the year but in this climate they tend to increase in number and severity in the summer.

Dermatophytosis of the foot may present a variety of clinical pictures. Most of these may be included in the classification of intertriginous, vesicular and hyperkeratotic groups. In most patients in whom the infection is minimal it consists of a macerated scaling between the toes, especially in the interspace between the fourth and fifth toes. With increased activity of the infection the scaling may spread to involve all the interspaces, although the space between the large and the second toe is seldom affected. There may be increased moisture, the surface often becomes sodden and erythematous, and at times fissures may appear in the interspaces and on the basal plantar surfaces of the toes, especially that of the fifth toe. Itching is usually present and often severe, while in the presence of fissures pain is an outstanding symptom.

In some cases vesicles appear on the sides or the under surfaces of the toes, and at times there are vesicular patches on the soles, especially on the insteps. Such acute attacks may appear on previously uninfected feet but more often they complicate intertriginous infections which may have been irritated mechanically, as by scratching, by increased perspiration or by overtreatment. The vesicles are usually deeply set and tense, and they often become sufficiently large to make walking difficult. When small the vesicle may dry spontaneously and result in a dry scale which soon exfoliates to leave a slight collaret. In most cases, however, the larger vesicles rupture to release a mucilaginous fluid and to expose a smooth, bright red base. Often the contents of the bulla become purulent and a red inflammatory areola develops. Such lesions do not tend to rupture spontaneously, and the removal of the roof of the bulla exposes a deeply excavated, red, granular multilocular base. At times groups of vesicles may coalesce to form patches of varying size. These patches characteristically have a sharply outlined border which is often serpiginous and which shows an overhanging peripheral scale. The center may become covered by epithelium or it may be the site of fresh vesicular outbreaks. Itching in these conditions is usually severe, and it often leads

The photographs are from the collection of Dr. James Herbert Mitchell.

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1. Ormsby, O. S., and Mitchell, J. H.: Ringworm of the Hands and Feet, J. A. M. A. **67**: 711 (Sept. 2) 1916.
2. Weidman, F. D.: Laboratory Aspects of Epidermophytosis, Arch. Dermat. & Syph. **15**: 415 (April) 1927.
3. Lewis, G. M., and Hopper, M. E.: An Introduction to Medical Mycology, Chicago, Year Book Publishers, Inc., 1939.
4. White, C. J.: Fungous Diseases of the Skin, Arch. Dermat. & Syph. **15**: 387 (April) 1927.
5. Sulzberger, M. B.; Baer, R. L., and Hecht, Rudolph: Common Fungous Infections of the Feet and Groins, Arch. Dermat. & Syph. **45**: 670 (April) 1942.

patients to tear the vesicles open or to puncture them, procedures which are sometimes followed by secondary infection. In the intertriginous and the vesicular forms there is a tendency for both feet to be involved, but it is not uncommon for one foot to be severely inflamed while the other may be entirely well or show but a minimal infection.

In the chronic hyperkeratotic type the involvement is usually bilateral and often symmetrical. Any part of the plantar surface may be affected, the involved areas ranging from a small patch on the instep or heel to the entire sole. In such cases the dermatophytosis often begins with vesicles, but eventually there are produced sharply outlined patches in which the horny layer is uniformly thickened, with no tendency to central clearing. The scale is grayish and dry, and it may show variations in thickness even to forming a shell-like coating. At times fissures may occur within these patches and extend deeply into the underlying flesh, producing intense pain. Lewis and his associates [6] have shown that a specific clinical picture of infection is produced by T. purpureum. Vesicles or acute inflammation practically never occur. Usually there are sharply outlined patches involving from a small area to the entire sole. In the cases of

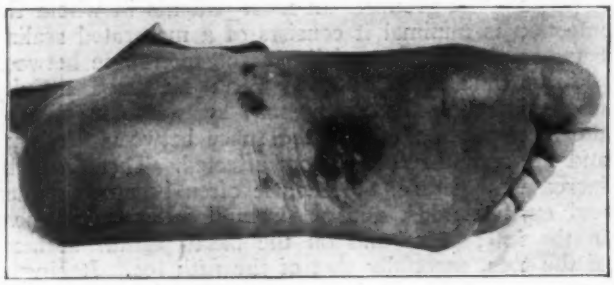

Fig. 1.—Acute vesicular dermatophytosis on the foot.

greater involvement the infection extends up on the sides of the foot and about the heel. The infected skin is dull red, with fine branny scaling and no tendency toward central clearing. Itching is commonly present.

The nails may be infected by any of the ringworm fungi. The infection commonly begins under the free margin of the nail or at the sides as a grayish or dark accumulation of scale and débris which lifts the nail away from the nail bed. Linear streaks of this débris extend posteriorly toward the nail root, and the overlying nail becomes opaque and yellowish, and at times greatly thickened. One or several nails may be affected. In infection by T. purpureum the progress of the disease is slow but there is a tendency for the infection to spread gradually to involve all of the nails. The separation of the nail from its bed proceeds backward from the free margin, and the loose part of the nail becomes thin and brittle. Eventually it is shed, exposing an opaque rough surface that is irregularly ridged and that extends to a shrunken proximal stump of the nail. Paronychia is not ordinarily seen in these cases. Infection of the nail may persist long after all other clinical evidence of the disease has disappeared. In this stage the nail may then harbor in a dormant state the fungi from which active dermatophytosis may later develop.

6. Lewis, G. M.; Montgomery, R. M., and Hopper, M. E.: Cutaneous Manifestations of Trichophyton Purpureum (Bang.), Arch. Dermat. & Syph. **37**: 823 (May) 1938.

The clinical pictures described in the foregoing paragraphs may be complicated by various developments. Scratching or puncturing the vesicles may be followed by secondary infection, although at times pustules develop without apparent preceding trauma. These pustules are often the portal of entry for bacteria which produce streaks of lymphangitis which may extend upward on the leg and thigh and result in regional lymphadenopathy. At times cellulitis may develop about the pustules, and this may extend to the dorsal surface of the foot and cause great swelling, pain and fever. Not infrequently erysipelas-like patches occur on the dorsal surface of the foot and on the leg, and these are introduced by chills and fever identical with the symptoms that accompany erysipelas on any other parts. This type of lesion has been variously explained as an allergic reaction to the fungus infecting the feet [7] or as an actual streptococcic infection [8] in which the portal of entry is often an interdigital fissure resulting from dermatophytosis. Exacerbations in the fungous infection of the feet are often followed by recurrences of these erysipelas-like attacks. Patches of dermatophytosis may appear on areas adjacent to the foot by direct extension or the infection may be implanted on other moist areas such as the groins, the axillas and the region about the anus. Not infrequently, however, eruptions occur on distant parts which are caused by hematogenous transmission of the fungus or its toxins from its original focus on the feet to sites previously sensitized, on which there develops an allergic "id" reaction.[9] The most common secondary site for the dermatophytid is the hand. There the lesions occur as small vesicles on the sides of the fingers or often as small or large, deep, tense vesicles on the palms. Fungi ordinarily cannot be demonstrated in these secondary vesicles on the hands. Occasionally dermatophytids may be generalized and may take the form of lichenoid lesions, eczematous or psoriasiform patches, erythema multiforme-like lesions or urticaria. Often the development of the "id" reaction is initiated by overtreatment of the original infection on the foot.

The diagnosis of dermatophytosis can generally be made on the appearance of the lesions. Fungi can be demonstrated in most cases by a microscopic examination of the scale or the vesicle fluid prepared with a 10 per cent solution of potassium hydroxide. It has become fashionable to diagnose most dermatoses of the foot as "athlete's foot," and one should always search for and demonstrate the fungus before accepting the diagnosis. Differentiating the fungi by cultural methods is of aid in determining the prognosis of an individual case, for infection by T. purpureum is much more resistant to treatment, and it should receive more drastic measures. Diagnostic testing with trichophytin is of little value, for a positive reaction demonstrates merely that an infection has at some time been present. Dermatophytosis must be differentiated from many disorders of the foot. In the acute forms it may be confused with dermatitis due to external irritants such as shoe dyes or at times formaldehyde used prophylactically. The disease may in some cases be simulated by moniliasis, dyshidrosis, pustular psoriasis, pustular

7. Traub, E. F., and Tolmach, J. A.: An Erysipelas-like Eruption Complicating Dermatophytosis, J. A. M. A. **108**: 2187 (June 26) 1937.
8. McGlasson, I. L.: Recurrent Erysipelas of the Legs with Dermatitis of the Feet, Arch. Dermat. & Syph. **14**: 679 (Dec.) 1926.
9. Williams, C. M.: The Diagnosis of Some Eruptions on the Hands and Feet, Arch. Dermat. & Syph. **5**: 161 (Feb.) 1922.

bacterid,[10] streptococcic infection,[11] chronic eczema and psoriasis. While the differentiation from these dermatoses can often be made on clinical grounds, the most valuable differential finding in dermatophytosis is the fungus. The hyperkeratotic form may at times resemble tertiary syphilis, but in that infection the lesions are nearly always unilateral and never symmetrical. Onychomycosis may be simulated by the nail changes seen in psoriasis. In the latter, however, there are often diagnostic lesions present on other parts and fungi are never found in the scrapings. To demonstrate the fungus in nails infected with T. purpureum it is necessary to scrape the nails quite deeply.

In the prophylaxis of dermatophytosis efforts should be directed chiefly to preventing activation of the dormant foci of infection that are present on most feet. Feet should be bathed often and dried thoroughly, socks should be changed frequently, and shoes must be permitted to dry well after wearing. Dusting powder used regularly between the toes and in the socks helps to absorb the perspiration and to keep the feet dry. To protect against contracting an extraneous infection one should never walk barefooted on damp floors or wear shoes or socks that may have been contaminated with pathogenic fungi. Contaminated socks should be boiled, and shoes should be fumigated with formaldehyde vapor after each wearing.

The many systems of treatment and the great number of drugs recommended indicate that there is no specific cure for dermatophytosis. While it is relatively easy to destroy fungi in the test tube, on the foot it is more important to adapt the treatment to the clinical state of the dermatosis rather than to the particular species of fungus present. In cases of mild intertriginous infection the use of antiseptic dusting powders, such as borated talc with the addition of 2 per cent salicylic acid, or mild tincture of iodine, may be effective. In acute vesicular cases great relief may be obtained by removing the tops of the vesicles with scissors and applying continuous cold wet dressings of a 1:4,000 aqueous solution of potassium permanganate or a 1:16 dilution of solution of aluminum acetate. Such wet dressings tend to allay the inflammation and to reduce the hyperhidrosis which generally accompanies these infections. In cases of severe infection it is advisable to keep the patient off his feet, and in these cases the wet applications are preferable to foot baths which necessitate holding the feet dependent. Instead of using strong antiseptics in such acute conditions, it is best to disregard the fungous cause for the time being and to treat the infection as an acute dermatitis.

When the acuteness of the process has subsided, stronger measures may be introduced. Fissures may be painted with a 5 per cent solution of silver nitrate. Foot baths in a 1:4,000 solution of potassium permanganate may be continued, and in addition keratolytic agents, such as diluted ointment of benzoic and salicylic acid, may be applied. Mild tincture of iodine may be used or any of the dyes that are recommended as fungicidal agents, such as 2 per cent gentian violet solution or Castellani's paint. In cases of the chronic hyperkeratotic form stronger medication is often necessary, but the strength of the drugs used should not be increased more rapidly than the tolerance of the skin will permit. Ointment of benzoic and salicylic acid to which 1 per cent thymol has been added is a time honored remedy, and ointments of phenylmercuric nitrate (1:1,500), crude coal tar (1 to 5 per cent), anthralin (dihydroxyanthranol) (0.1 per cent to 1 per cent) and chrysarobin (1 to 10 per cent) are often useful. Roentgen rays are in general use in treating the chronic infections, and they form a valuable adjunct in the treatment of dermatophytosis. The use of camphor-phenol mixtures is at times followed by burns, and the benefits to be derived are hardly worth the risk. Biologic therapy with trichophytin has generally proved disappointing.

The treatment of infected nails produces at best but slow improvement. In cases caused by T. purpureum the prognosis is nearly hopeless. The various remedies used include ointment of benzoic and salicylic acid, 6 per cent salicylic acid and 12 per cent benzoic acid in alcohol, and Castellani's paint. The surface of the nails should be scraped before any medication is applied. Roentgen rays should be used cautiously. Removal of infected nails on the feet is not advised, for the new nails tend to be reinfected.

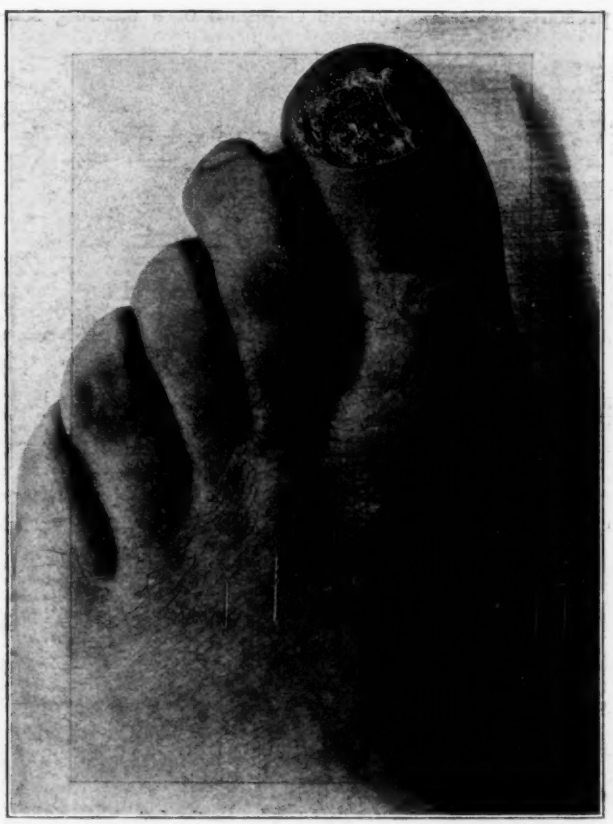

Fig. 2.—Ringworm infection of the nail. The surface of the nail was smooth before it was cut away from the nail bed.

Moniliasis.—Moniliasis is an infection of the skin caused by a yeastlike fungus, Monilia albicans.[12] This fungus is often present normally in the gastrointestinal tract, but when present on the skin it is generally pathogenic. The resistance of the skin to monilial infection is greatly lowered by maceration. Obese persons, in whom intertrigo is common, often suffer from this disease, while profuse sweating or prolonged immersion in water, as in water baths, is frequently

10. Andrews, G. C.; Birkman, F. W., and Kelly, R. J.: Recalcitrant Pustular Eruptions of the Palms and Soles, Arch. Dermat. & Syph. **29**: 548 (April) 1934.

11. Mitchell, J. H., Streptococcic Infection Simulating Ringworm of the Hands and Feet, J. A. M. A. **104**: 1220 (April 6) 1935.

12. Hopkins, J. G.: Moniliasis and Moniliids, Arch. Dermat. & Syph. **25**: 599 (April) 1932.

followed by moniliasis. This predilection is greatly increased in diabetic patients.

Moniliasis may affect many parts, as in the clinical forms of erosio between the fingers, as in perlèche, as in intertrigo on the axillas, groins, anal fold or under the breasts, as in vaginitis, as in thrush, or it may become generalized. When the foot is involved, the lesions are often found in the spaces between the toes as shiny red moist patches of intertrigo that are sharply outlined. The patches spread by peripheral extension and are surrounded by many outlying inflamed small macules or vesicopustules. In time there may develop large, circumscribed, bright red, oozing patches that cover much of the dorsal surface of the foot. There is no tendency to central clearing. One or both feet may be involved. Itching may be present, but most patients complain of a burning sensation, especially after contact with water. An "id" reaction may develop, especially following overtreatment, and the moniliid may become generalized.

Fig. 3.—Monilia intertrigo on the foot.

The nails are often affected, either primarily or as a complication of the infection of the skin. An injury such as may occur in manicuring often precedes the infection. One or several nails may develop paronychia with a bolster-like swelling accompanied by acute symptoms of erythema, tenderness and at times throbbing pain. The proximal portion of the nail becomes irregularly roughened and depressed at the site of the infection, and frequently the sides of the nail become darker and thickened. As the nail grows out the pathologic changes move distally as a transverse band. In chronic infection the entire nail becomes involved in time, or it may be shed; the prognosis for the regrowth of a normal nail, however, is good.

The diagnosis of a monilial infection can usually be made on the clinical appearance of the circumscribed, bright red, oozing patches. The intertriginous form must be differentiated from dermatophytosis, streptococcic dermatitis and dermatitis caused by the use of strong local medication. Monilial paronychia is not very painful, and it does not yield pus on incision as would a pyogenic infection. The most important diagnostic finding, however, is the causative fungus. This cannot always be demonstrated on direct microscopic examination, but cultural methods are generally successful in proving the diagnosis.

In treating moniliasis it is important in every case to rule out the presence of diabetes mellitus. In patients with diabetes strict control of that disease must be accomplished before any improvement in the monilial infection can be produced. Almost specific in the local treatment of monilial infections of the skin and nails is a 1 per cent aqueous solution of gentian violet. Roentgen rays are beneficial, especially in paronychia. Ammoniated mercury ointment (3 to 5 per cent) is often effective. While in some cases cold wet dressings of a solution of potassium permanganate (1:4,000) reduce the inflammation and oozing, good results are more often obtained by keeping the infected parts dry. Soap and water should not be used, and the foot should be dusted frequently with borated talc or with powdered starch.

THE DEEP MYCOSES

Mycetoma.—The only fungous infection involving the deeper tissues that shows a predilection for the foot is mycetoma, or Madura foot. This disease, endemic in India and parts of Africa, is rare in the United States, only about 24 cases having been reported, chiefly from the Southwestern states.[13] Many fungi have been reported as being the cause of mycetoma,[14] among them Actinomyces and Madurella. Most cases have been seen in men who worked barefooted on the farm, and the fungus was supposedly introduced into the deeper tissues of the foot through an injury. After an incubation period varying from one month to several years a small red nodule appears at the site of injury, most often on the plantar surface of the foot. The nodules enlarge, soften and break open to discharge a yellowish, blood streaked viscid fluid containing granules. By the color of these granules cases of mycetoma formerly were classified into grayish, red and black varieties, but such a division overlooked the fact that granules of the same color may be produced by different fungi. From each open lesion a sinus penetrates deeply into the foot, and these sinuses do not heal. New nodules appear, enlarge and open, and after many years the foot becomes bulbous and its entire surface covered by bullae and pustules. Each of these includes the opening of a channel that penetrates deeply through soft tissues to the bones, eventually resulting in osteomyelitis. The foot becomes greatly deformed and useless, while the leg becomes atrophic. Pain is generally absent, there is no especial effect on the general health, and the course of the disease is very chronic.

In cases of advanced infection the appearance of the bulbous foot is diagnostic. Earlier in the course of the disease the diagnosis can be made from the discharged granules resembling fish roe and by the microscopic demonstration of the fungus in these granules.

In the early stages treatment with large doses of potassium iodide may be helpful, but in most of the

13. Lovejoy, E. D., and Hammack, R. W.: Mycetoma, Arch. Dermat. & Syph. **11**: 71 (Jan.) 1925.
14. Gammel, J. A.: The Etiology of Maduromycosis, Arch. Dermat. & Syph. **15**: 241 (March) 1927.

reported cases cure was finally obtained only by amputation of the infected foot.

Sporotrichosis.—Cases of sporotrichosis have been reported from many parts of the world, especially France. In the United States most of the recorded cases have occurred in the region of the Mississippi Valley. Sporotrichum schencki is the fungus most often demonstrated in our cases, and it is widely distributed in the excreta of human and animal carriers and on many plants. The disease affects not only man but horses, mules, dogs and rats.

Infection has been shown in some cases to follow an injury with a thorn [15] through which the fungus was introduced into the skin. Gardeners and farmers are especially prone to contract this disease. In the localized lymphangitic type of sporotrichosis, which is the one most commonly seen here, a lesion develops at the site of injury after an incubation period of about a week. This "sporotrichotic chancre" is an indolent nodule which in most cases ulcerates, and at times it may be indurated and resemble the primary lesion of syphilis. It occurs most often on the finger or the hand, but it has been described also on the foot and other parts. About a week or longer after the appearance of the primary lesion a linear chain of indurated subcutaneous nodules appears along the course of the lymphatics ascending from the site of infection, and the lymph vessels become thickened and cordlike. These nodules enlarge, become attached to the skin and generally ulcerate to discharge a grayish yellow pus. The ulcers sometimes heal slowly but in most cases they persist indefinitely. The regional lymph glands are not enlarged, and there are no constitutional symptoms. Other types of sporotrichosis are the disseminated subcutaneous type which is often seen in France, the disseminated ulcerating type [16] and the systemic type.

The diagnosis is generally made on the appearance of an ulcerating nodule at the site of an injury to the skin followed by the development of a chain of indolent subcutaneous nodules. The disease must be differentiated from other deep fungous infections and from tularemia, tuberculosis, syphilis and pyogenic infections. The diagnosis can be established by demonstrating the sporothrix on culture, by animal inoculation (rat) or by complement fixation and agglutination tests.

The use of potassium iodide in large doses is specific in sporotrichosis, and local roentgen treatment hastens the involution of the lesions.

Blastomycosis.—Blastomycosis may at times involve the foot. The causative fungus in cases seen in the United States is Blastomyces dermatitidis.[17] A great majority of the cases have been reported from the Middle West, especially from Chicago. The lesion begins as a small papulopustule, which soon becomes crusted. It enlarges gradually by peripheral extension to produce sharply outlined patches, limited by a rounded or polycyclic border. In a large patch there is a separation of the lesion into definite zones: In the center lies an irregular whitish depressed atrophic area. About this is a wide zone in which the surface is papillomatous and either bathed by a seropurulent discharge or covered by a thick adherent crust. The border is sharply demarcated, and it slopes abruptly from the warty zone to the surrounding normal skin. The border is violaceous red, shiny, and covered by many minute abscesses. The lesions may be widespread, and in some cases the infection may become systemic as well.

The diagnosis can be established by microscopic examination of a potassium hydroxide preparation of pus obtained from a small abscess in the border. Microscopic examination of the tissue will also demonstrate the blastomycetes within the giant cells present in the granuloma. Blastomycosis must be differentiated from tuberculosis verrucosa cutis, tertiary syphilis, bromoderma, sporotrichosis and epithelioma. This differentiation may be accomplished most conclusively by demonstrating the fungus.

Treatment may at times be successfully carried out in cases in which the infection is localized to the skin, while in cases of systemic blastomycosis the prognosis is nearly hopeless. Large doses of potassium iodide by mouth and roentgen rays locally are generally effective, while a small lesion may be excised successfully if the diagnosis is made early.

Fig. 4.—Monilia paronychia and onychia.

Chromoblastomycosis.—Chromoblastomycosis is a chronic infection of the skin caused by at least six species of fungus, the most common reported in the United States being Phialophora verrucosa. The disease was first recognized in Brazil in 1911 and in the United States in 1915.[18] In recent years it has been reported with increasing frequency.[19] Any exposed part may be affected, and the foot is often the site of the infection. There is generally a history of injury with wood, and the lesion appears at the site of injury within a few weeks. The lesions have been classified into five clinical types: the verrucous, the tuberculoid, the syphiloid, the psoriasiform and those which result in elephantiasis from scarring. They are generally unilateral; pain and itching are absent, and the course is chronic. The diagnosis is not ordinarily suggested clinically; in most cases it is made only on microscopic examination of the tissue. The microscopic appearance is that of chronic granuloma, with the characteristic fungus cells being found both free and within the giant

15. Foerster, H. R.: Sporotrichosis, an Occupational Dermatosis, J. A. M. A. **87**: 1605 (Nov. 13) 1926.
16. Moore, Morris, and Kile, R. L.: Generalized, Subcutaneous, Gummatous, Ulcerating Sporotrichosis, Arch. Dermat. & Syph. **31**: 672 (May) 1935.
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18. Lane, C. G.: A Cutaneous Disease Caused by a New Fungus Phialophora Verrucosa), J. Cutan. Dis. **33**: 840, 1915.
19. Weidman, F. D., and Rosenthal, L. H.: Chromoblastomycosis: A New and Important Blastomycosis in North America, Arch. Dermat. & Syph. **43**: 62 (Jan.) 1941. Moore, Morris; Cooper, Zola K., and Weiss, R. S.: Chromomycosis (Chromoblastomycosis), J. A. M. A. **122**: 1237 (Aug. 28) 1943.

cells. Because of the multiplicity of the types of lesions seen, chromoblastomycosis must be differentiated clinically from nearly all the chronic granulomas and tumors, and a microscopic examination is always necessary. Surgical excision or destruction by electrocoagulation may be successful in eradicating small lesions. Large doses of potassium iodide and roentgen rays may at times be helpful.

CONCLUSIONS

In recent years fungous infections of the foot have become endemic throughout all parts of the United States. Much progress has been made in the direction of refining methods for the diagnosis of fungous infections and for combating these diseases both by local and by biologic measures. Rapid transportation and the worldwide movement of great masses of men will inevitably result in a wider distribution of fungous infections that have until now been limited to isolated sections. It is to be hoped that the increased mycologic research that will thus be stimulated will provide new weapons of defense against this menace.

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COMMON HYPERKERATOTIC LESIONS OF THE FOOT

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The high percentage of those who have been rejected or deferred because of foot defects among civilians called to the armed services bears out the often quoted saying that no part of the body is more neglected in general medical practice than the feet. A recent article titled "Health of Selective Service Registrants" [1] states that 30,000 of a total of 720,000 examined were unqualified for general military service because of foot defects. Of these, 21,000 were qualified for limited military service and 9,000 were disqualified for any military service.

A large number of those qualified for limited service have defects that are remedial. Many of these defects could have been prevented by giving better attention to footgear in early childhood and youth. Frequent examinations will prevent many bony malformations which later lead to various keratotic lesions of the feet. These preventive measures are neglected now. Even the treatment of minor defects of the feet, regardless of the pain and the disability which they cause, has been neglected by the physician.

Common hyperkeratotic lesions of the feet are discussed here. Such conditions as keratosis blennorrhagica, arsenical keratoses, congenital keratosis palmaris et plantaris and climacteric hyperkeratosis occur so rarely that they are of interest only to the dermatologist. The common lesions with which the physician in general practice can do much are callus, clavus and verruca.

We have been fortunate in having had an exceptional opportunity to diagnose and treat an unusually large number of foot lesions. We do not wish to appear dogmatic but we have seen many mistakes in the diagnosis of keratotic lesions of the feet and errors in the application of radiotherapy. The recognition of these simple lesions and their proper treatment would prevent many unfortunate sequelae.

CALLUS OR CALLOSITAS

Ordinary callus is a circumscribed or a diffuse hyperkeratotic or indurated area of the skin. The area may be covered with loosely adherent flaky corneous tissue masking the papillary lines. At times this horny mass may be ¼ inch (0.5 cm.) thick and very firm. When this is shaved off, the papillary lines are all clearly visible and are not interrupted or broken. There is no central core, and thus a callus is differentiated from a corn. A callus results almost invariably from unusual friction or pressure or both. On the foot it is due either to faulty footgear or some orthopedic condition, such as displacement of the head of one or more metatarsal bones. A callus may cause a burning sensation or definite pain.

Treatment.—Paring, shielding and wearing properly fitting shoes usually effect a cure. The callus is gradually thinned by shaving carefully with a sharp scalpel until the skin is of nearly normal thickness. Moleskin adhesive plaster is placed over the area. A thicker felt pad or a foam rubber one may be placed behind the callus to raise a depressed metatarsal head. Before shaving, applications of 40 per cent salicylate acid may be used to thin the callus.

Excision of a callus is not recommended, because a painful scar frequently results in its place. Roentgen therapy [2] is usually unnecessary and is inadequate unless the pressure is permanently removed. It is to be condemned in cases in which the plantar fat pad has been thinned.

When pressure results in central vascularization of the callus, roentgen rays are of value to relieve pain and desiccate the capillaries. The rays should be given to the central vascularized part only, in doses of 300 to 600 roentgens. We have found much damage from large doses of roentgen rays or radium given to large areas. The formation of an ulcer is the most common harmful result of overirradiation of a callus.

Cooperation with an orthopedist or a chiropodist is often advisable. A metatarsal bar properly placed behind the metatarsal heads may give pronounced relief in the case of callus.

CORN OR CLAVUS

A corn is a callus in the center of which is a conical horny mass. The base of this keratotic growth is directed outward, and the apex presses against the sensitive subjacent structures. The central core, or radix, is formed by compact laminated horn cells. It presses on and thins or destroys the subjacent epidermis until it reaches the underlying nerve endings, causing much pain.

Corns are termed hard or soft, depending on their location. Both types result from pressure on bony prominences. Hard corns extend over a bony prominence. Soft corns occur between the toes, where they become macerated by sweat.

The most common site for a hard corn is over the outer side of the small toe. A corn is sometimes found in a nail groove, on the tip of a small toe or on a pressure point on the sole of the foot. In the hard corn there is usually one core, but there may be several. Its shape depends on the contour of the bone beneath

This paper, in a symposium on "Cutaneous Disorders of the Foot," is published under the auspices of the Section on Dermatology and Syphilology.

1. Rowntree, L. G.; McGill, K. H., and Folk, O. H.: Health of Selective Service Registrants, J. A. M. A. **118**: 1223 (April 4) 1942.

2. McCafferty, L. K., and McCarthy, C. L.: The X-Ray Treatment of Callosities and Verruca Plantaris with Some Remarks on the Pathogenesis of These Lesions, J. Bone & Joint Surg. **7**: 883 (Oct.) 1925.

and may be round, crescentic or ridged. Under the corn in many instances may be found a sac, a so-called adventitious bursa, formed by rupture of connective tissue, which eventually develops into a lined sac.

The soft corn is found most commonly in the interspace between the fourth and the fifth toe. It is usually in the most proximal portion of the toe web or on the medial side of the little toe and appears macerated. Frequently not until the macerated skin is pared away is the radix of the corn found. It may be single but is usually double and is located over two opposing bony prominences. Soft corns are extremely painful lesions. The soft corn has no connection with dermatophytosis. However, it has been mistaken for the maceration one often sees in that infection.

An ill fitting shoe may be a factor in producing a hard or a soft corn by causing intermittent pressure over some bone or joint. Palpation reveals a subjacent prominence. An improper shoe may also upset the mechanics and muscle balance of the foot. This may cause abnormal apposition of bony heads.[3]

Treatment.—The prevention of corns depends primarily on a change to footgear of the proper size and shape. Conservative therapy is preferred and consists mainly in paring and then protecting by shielding over bony prominences with felt, foam rubber or latex pads. This palliative measure gives the patient temporary relief. For permanent relief, Fripp and McConnel[4] stress the restoration of proper muscle balance. They advise proper exercises for the feet, faradic foot baths, adhesive strapping to prevent spreading of the metatarsal bones and properly fitted shoes. Occasionally, radical excision of a hard corn and the adventitious bursa when present will effect a cure. At times the bony prominence underlying the corn will have to be removed. Operation for hammer toe, tenotomy or amputation of the fifth toe may have to be performed in some cases.

Roentgen therapy[5] helps in the relief of pain. It stops the active production of the horny mass making up the corn. Roentgen rays are given to the lesion with close lead shielding in doses of 800, 650 and 500 roentgens at ten day intervals. In our experience, however, radiotherapy has never resulted in permanent benefit in the case of the common corn, hard or soft.

Injection therapy[6] uses long acting local anesthetics. These are injected in a fan shaped area proximal to the corn. The corn may then be dissected out and a thin felt pad placed directly over the site. Injection alone relieves the pain and frequently effects a cure. Forty per cent salicylic acid plasters may be used with caution, but only on patients who are nondiabetic and who have normal vascular systems. If a hard corn is infected or shows a sinus, soothing wet dressings are indicated. At times a roentgenogram of the phalanx should be taken. The application of 95 per cent phenol or 50 per cent solution of silver nitrate to the sinus often aids in its closure. In the treatment of soft corns conservatism is best. Only in rare instances will it be found necessary to do surgical excision.

In most cases, with a change to more roomy footgear, further therapy comprises dissection of the radix of the corn with a special type of curved chisel, a "soft corn spoon," elevation of the head of the fourth metatarsal bone by a foam rubber shield and local application of 50 per cent silver nitrate solution to the pared corn. Separation of the involved toes gives relief. This is done by inserting a small felt wedge shaped as a duck's bill, a piece of foam rubber or lamb's wool.

There may be two complications in the case of soft corn, either of them serious in the presence of diabetes or of a disease of the peripheral circulation. In addition to the usual pain of the corn itself there may be inflammation and swelling extending to the dorsum of the foot. Soft corns may be infected by self paring and careless use of advertised solvents. Drainage and wet dressings are indicated. A sinus may complicate the lesion. It may lead into a dilated sac, which should be opened, curetted and packed, or there may be a sinus extending to the flexor tendon sheath.[7] In some instances a sinus yields to phenol applied to its depth on a fine applicator. In others complete excision of the sinus is required.

Fig. 1.—Corn on the big toe showing pronounced lamination of horny tissue.

NEUROVASCULAR CORN

The neurovascular corn is rarely mentioned in medical literature but it has long been noted by chiropodists. It is a definite entity. It is usually located under the first or the fifth metatarsal head; at times it may be on the plantar aspect of the big toe or the dorsum of the fifth toe. It is vascularized and intensely painful. Hypertrophied blood vessels may be seen through the transparent horny layer, lying parallel with the surface and not vertically as in verruca. Close examination may reveal minute superficial fissures. After the corn has been shaved, threadlike nerve elements may be seen interspersed with the blood vessels. The corn is small, rarely larger than $\frac{3}{16}$ inch (0.5 cm.) in diameter. It occurs in the hyperthyroid person or in the person with thin textured, delicate skin.

Treatment.—Lesions of this type are resistant to all therapy. They have frequently been mistaken for warts and have been much irradiated without close shielding

3. Macey, H. B.: The Etiology and Treatment of Soft Corns, Proc. Staff Meet., Mayo Clinic. **15**: 549 (Aug. 28) 1940.
4. Fripp, A. T., and McConnel, J. K.: Corns and Callosities: Their Diagnostic Value and Treatment, Lancet **2**: 699 (Sept. 29) 1934.
5. MacKee, G. M.: X-Rays and Radium in the Treatment of Diseases of the Skin, Philadelphia, Lea & Febiger, 1938, p. 641.
6. Cordingley, E. W.: Injection Therapy in Helomata, J. Nat. A. Chiropodists **31**: 10 (Feb.) 1941.
7. Chase, H. M.: Pathology of Clavus, Boston M. & S. J. **175**: 134 (July 27) 1916.

both with roentgen rays and radium. These unfortunate mistakes have often led to chronic ulceration. Since the neurovascular corn is always under a bony head, excision is definitely contraindicated. The resulting scar usually is more painful than the original lesion. However, excision with plastic repair might give a successful result. The best treatment is a combination of roentgen therapy and application of local astringents and padding. When roentgen rays are to be given, the lesion is shaved down and its border outlined carefully in ink. Three doses are given at ten day intervals to this area alone. The initial dose is 800 roentgens, the second 650 roentgens and the third 500 roentgens unfiltered. Irradiation of the corn inhibits further development. Local applications of 50 or 100 per cent

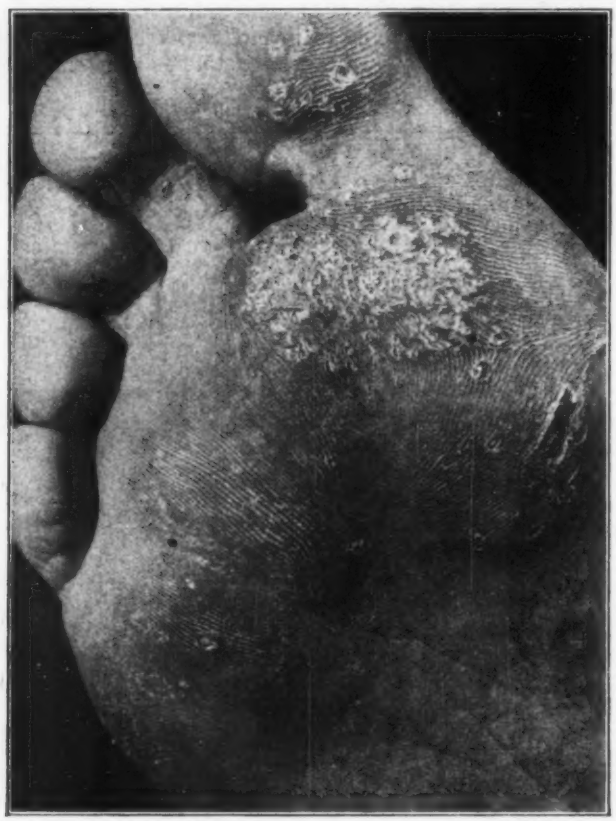

Fig. 2.—Mosaic wart with scattered outlying warty elements.

silver nitrate solution are made after the roentgen therapy. These applications may also be made without roentgen therapy.

Following the sedative astringent effect of roentgen therapy, best results are obtained by shielding with foam rubber. A piece, preferably 5/8 inch (0.8 cm.) thick, cut to the shape of the foot from the middle of the long arch to the bases of the toes, skived at the margin, can be placed against the sole inside the stocking. When properly placed it remains in a fixed position. Occasionally, if further localized shielding is necessary, a crescentic piece of thinned foam rubber may be cemented about the painful lesion. This shielding may need to be renewed every second month.

Acid therapy gives little relief, although salicylic acid has helped in some cases.

Injection therapy with long acting anesthetics,[6] as mentioned with respect to hard corns, has given some relief.

WARTS, OR VERRUCAE

Warts, or verrucae, may be present on the feet. When on the sole they are termed verrucae plantares, and when on the dorsal surface of the foot or toes, verrucae vulgares or planae. Verruca vulgaris is the common seed wart which is so often present on the hands of children and adolescents. Since there is no pressure on the dorsal surface the warts are elevated. Plantar warts, which are nearly level with the surface of the skin, are divided into three types: the "single," the "mother-daughter," or "epidemic," and the mosaic warts.

Single warts are located under pressure points, usually under the metatarsal heads. They may be exceedingly painful. There may be two to four of these under the bony heads. Trauma acts as a definite etiologic factor. These warts are usually the same size. Each is surrounded by callus and has a sharply limited border. Paring reveals the border, and the capillary tips are seen. The tips near the border tend to spray out as if coming from a more central area at the base of the wart. Definite capillary bleeding may be present if paring is deep enough.

Warts of the "mother-daughter," or "epidemic," type may involve any part of the sole. There is a central larger lesion with outlying satellites, some of which may be so minute and transparent as to resemble vesicles. The original, or mother, lesion is usually surrounded or embedded in callus, while the smaller ones are not. At times an area of erythema surrounds them and they may be very painful. Shaved, the mother wart has the same appearance as the single type except that there is more definite radiation of capillaries. When the small vesicular lesions are pared, one or two capillary tips may be cut. Bleeding from these warty capillary tips is rather profuse and prolonged if not stopped by a styptic.

Warts of this type occur usually in adolescents under 18 years of age. They are often accompanied by warts on the hands.

The mosaic wart[8] is a multiple patchy lesion limited almost invariably to the sole, though occasionally it is found in an interdigital area. To this type, one of us in 1928 applied the term "mosaic" to describe its surface characteristics. Warts of this type appear most commonly as patches of various size on pressure points of the sole, especially beneath metatarsal heads and the heel. They are irregularly bordered, dry and topped by a rather granular, friable, horny mass. They are usually painless.

Before paring, the skin appears rough and granular and the wart is often mistaken for and treated as a common callus. After paring, one sees an area composed of soft cornlike segments so closely packed that those in the central part have angular rather than rounded borders—hence the term mosaic. The individual cell or core is usually from 2 to 3 mm. in diameter. Patches may vary in size from that of a pea to 5 cm. or more across. Papillary lines on the sole are large and translucent, often transparent. By moistening the skin with alcohol, oil or glycerin one can see quite deeply. The earliest stage of a mosaic wart appears as a local widening of a normal papillary line. Sometimes two such minute growths appear side by side within a line. They increase in number and gradually form a patch. Numerous minute outlying patches may

8. Montgomery, A. H., and Montgomery, R. M.: Mosaic Wart: An Unusual Type of Plantar Wart, New York State J. Med. **37**: 1978 (Dec. 1) 1937.

be found singly or in groups. Some superficially resemble common plantar warts but paring shows their multicellular character.

Coincident with plantar warts of any of these types there may be widely scattered warty lesions on the hands, the fingers or the dorsa of the feet. Accompanying mosaic warts these lesions are usually of the verruca plana type while with the other types they are of the verruca vulgaris type.

A verruca in a corn is another unusual type of wart. It rarely occurs. In a period of fifteen years we have observed about 30 cases. Patients usually complain of an unusually painful corn. Verruca of this type is generally located in a corn on the fifth toe, though it has been observed in a corn on the fourth toe or over a "bunion joint" and even in a soft corn. On paring the horny layer from the corn one can see a central core. When the skin is moistened with alcohol or with glycerin definite capillary tips diagnostic of a wart are seen. The border is sharply marginated. Occasionally a wart of the mosaic type is found in a corn. In that case the border is irregular.

The infectious nature of warts has been proved by Wile and Kingery,[9] Sulkin and Harford [10] and others. They are caused by a filtrable virus. The presence of inclusion bodies in the cells has been established. Epidemics of the "mother-daughter" type occur in schools and institutions. Trauma from a stone or a nail frequently precedes the single type of wart.

Treatment.—The various means of treating verruca follow. The best therapy usually depends on the type present and whether it is radioresistant or radiosensitive.

Surgical excision is an easy and efficient means of removing both the plantar wart of the "single type" and the "seed" wart. It should not be used for the

Fig. 3.—Wart in a corn. Note sharply marginated warts with capillary tips in the center.

mosaic or the epidemic type. The ulceration caused is slow in healing on the plantar surface. Painful scars may result.

Electrosurgery is an excellent means of removing all but the mosaic type. The lesion may be curetted and the base desiccated or coagulated. The disadvantages are the long period of disability due to ulceration and the possible postoperative painful scar.

Psychotherapy is successful with the epidemic type of wart. There are many forms.[11] Rubbing the warts with a piece of stolen meat is an old method. More recently bismuth salicylate, sterile saline solution and

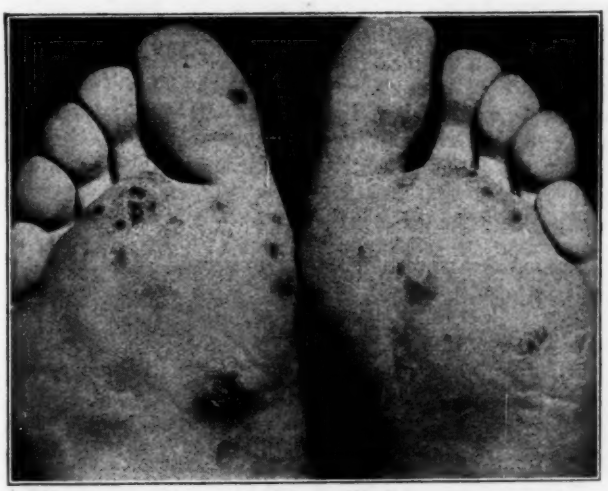

Fig. 4.—Epidemic type of verruca plantaris cured by psychotherapy by insertion of a sterile needle in the buttock.

other solutions [12] injected intramuscularly have been used. Patients have been cured by inserting only a sterile intramuscular needle into the buttocks.

Injecting local sclerosing solutions [13] directly into the base of the wart has proved successful. A small amount, 1 to 3 minims (0.06 to 0.18 cc.), is used. A larger amount will cause necrosis of the surrounding tissue. This type of therapy is best used for the single type. It is unsuccessful with mosaic warts.

Treatment of warts of all types with acids is successful. Chiropodists cure over 90 per cent by this means alone. Salicylate, nitric, trichloroacetic and dichloroacetic acids are the most popular. The caustics usually leave no scarring, although the treatment itself is painful.

For the mosaic wart, acid therapy has been most successful and is the treatment of choice. In our experience [8] the most satisfactory method comprises the use of salicylic acid followed by silver nitrate. A 40 per cent salicylic acid plaster cut to the size and the shape of the wart is applied. It may be reenforced with 60 per cent salicylic acid ointment. Monochloroacetic acid may be swabbed lightly over the warts first. This treatment is repeated every five to seven days after the removal of the macerated tissue.

When the thin rete is exposed, it is swabbed with a strong silver nitrate solution (1 grain to 1 minim [0.06 Gm. to 0.06 cc.]) every five to seven days. Outlying patches and single lesions are treated similarly. Care is taken to protect the area from water between dressings. The patches heal usually without scar formation or damage to the plantar fat pad. The treatment outlined is somewhat painful. When monochloroacetic acid is used it may be necessary to relieve a serous

9. Wile, U. J., and Kingery, L. B.: Etiology of Common Warts, J. A. M. A. **73**: 970 (Sept. 27) 1919.
10. Sulkin, S. E., and Harford, C. G.: The Laboratory Diagnosis of Virus Diseases, J. A. M. A. **122**: 646 (July 3) 1943.
11. Zwick, K. G.: Hygiogenesis of Warts Disappearing Without Topical Medication, Arch. Dermat. & Syph. **25**: 508 (March) 1932.
12. Allington, H. V.: Sulpharsphenamine in Treatment of Warts, Arch. Dermat. & Syph. **29**: 687 (May) 1934.
13. Hutton, J. G.: Verruca, with Description of Recently Introduced Treatment, Colorado Med. **34**: 478 (July) 1937.

subwart reaction by incising the overlying tissue. At times wet dressings are necessary.

Radiotherapy: Radiotherapy consists in the use of either radium or roentgen rays. In many cases radiodermatitis and ulceration follow the application of radium to the sole. The aberrant rays invariably affect normal tissue, causing these harmful effects. For that reason we do not approve of its use for plantar warts. However, many skilled operators get good results.

Roentgen therapy is a safe and efficient means of treating the plantar warts which are radiosensitive. The results we reported in 1941 [14] showed a total of 90.35 per cent cured by this method alone. Briefly, it comprises the use of a predetermined large initial dose. This is followed at ten day intervals by one, two or three saturation doses, four fifths of the initial dose, through

Fig. 5.—Plantar radiodermatitis with ulceration. Note hyperkeratosis about ulcer and outlying telangiectasia.

a precisely fitting shield hole in lead sheeting. The hole is reduced in size as the lesion shrinks. There has been an entire absence of subwart reaction or of any other unfortunate sequela. It is effective, safe, painless and comparatively rapid and entails no disability. It is the preferred method for patients with diabetes and those with faulty peripheral circulation.

In summing up the treatment for warts occurring on the feet, electrodesiccation with curettage is preferred for verruca vulgaris or plana and for verruca in a corn; radiotherapy, for the single and the epidemic type, although psychotherapy should be tried first in many of the latter cases; a special acid therapy, for the mosaic warts.

PLANTAR RADIODERMATITIS

Radiodermatitis of the plantar surface of the foot presents a fairly characteristic picture. It results from excessive irradiation by means of roentgen rays or radium. The radiation was given usually for neurovascular corns or mosaic warts, both of which are radioresistant. At other times a large area was irradiated without close shielding.

The radiodermatitis usually occurs over a bony prominence. Irradiation frequently destroys the fat pad, thus causing the underlying bones to traumatize the skin. The involved area may vary in size from ¼ inch to 2 inches (0.5 to 5 cm.) in diameter. It is thickened and may be covered with considerable horny tissue. In one such area which we saw the horny tissue was ¾ inch (about 2 cm.) thick. These areas may or may not be ulcerated. When the keratotic material is shaved off, scarring is evident, with the loss of normal papillary lines. At times small horny nuclei are present in the scarred area. Capillary tips varying in size and perpendicular to the surface are seen. Often small warty areas may be found in the lesion or about the periphery showing that the original lesion was a mosaic wart, which is resistant to irradiation. Frequently typical telangiectasis and erythema are found surrounding the keratotic area.

Ulceration is often present in these keratotic lesions. The ulcers are usually small, simulating sinuses. They may be single or multiple and are usually ⅛ inch (about 0.3 cm.), in diameter though they may be pea sized or larger. Sometimes they are linear. The base of the ulcer is a dirty gray. Ulcers due to irradiation are always difficult to cure.

Areas of plantar radiodermatitis in which there is hyperkeratosis are usually painful. When ulceration is present, pain is more intense. The fat pad may be thinned or destroyed in this type of radiodermatitis. When an extensive burn is present, the underlying bones become rigid, owing to scar tissue. Walking is usually difficult and painful. Pain may be present even when the foot is at rest.

Treatment.—Conservative treatment of radiodermatitis is best. Relief of pressure over the bony prominences is the most important factor in treatment. This is carried out by placing felt or foam rubber padding on the sole. The pad is placed posterior to the involved area and may surround it in a horseshoe manner to give relief. Foam rubber pads may be put directly over the involved area, cushioning it. Therapy is directed toward preventing ulcer formation by means of soothing or stimulating remedies and protective padding. Keratolytic ointments and plasters are contraindicated. Paring with a scalpel is the best method for removing keratotic tissue. Local therapy is of little avail in the scarred area. If ulceration is present, its healing is most important. Best results are obtained with an ointment containing cod liver oil, urea and tannic acid. To this ethyl aminobenzoate may be added. Aloe vera jelly has been recommended, but it is difficult to use when the patient is ambulatory. If this conservative therapy does not give proper results within several months, excision of the area with skin grafting may be carried out as recommended by Blair, Brown and Byars.[15]

Roentgen therapy is not condemned for certain hyperkeratotic lesions when given with the proper technic and dosage. Radium should not be used with lesions of the feet because there is lateral irradiation of the normal skin even though the lesions are well

14. Montgomery, A. H., and Montgomery, R. M.: Roentgen Ray Therapy of Plantar Warts, New York State J. Med. **41**: 371 (Feb. 15) 1941.

15. Blair, V. P.; Brown, J. B., and Byars, L. T.: Plantar Warts, Flaps and Grafts, J. A. M. A. **108**: 24 (Jan. 2) 1937.

shielded with lead. Unfortunately, when radium and roentgen rays are given in excessive doses and with faulty technic this destructive type of plantar radiodermatitis results.

DIFFERENTIAL DIAGNOSIS OF CALLUSES, CORNS AND WARTS

A roughened central mass in an encircling smoother callus should call for investigation. In differentiating lesions of this type one must shave the lesion down until a smooth surface is obtained. Moistening it with alcohol, oil or glycerin aids in the diagnosis. In callus the normal ridge and furrow system is maintained without any breaks in the papillary lines. The area is just thickened and hyperkeratotic. In a corn the calloused area is interrupted by a central horny core which contains no vascular elements. It is painful on direct pressure.

In the "single type" plantar wart the papillary lines are deviated around or interrupted by a small central mass. On superficial paring one finds an oval or rounded horny mass varying in color from the normal skin and sharply limited from it by a light, often transparent horny membrane. In the central mass can be seen minute dark points, which are coagulated blood in the tips of enlarged papillae. These capillaries seem to flare out from a more central point. Further paring opens these tips, causing capillary bleeding. Pain is elicited more by lateral pressure than by direct pressure. If multiple they are all about the same size.

In the epidemic type of plantar wart there is one large original wart similar to a "single type" wart. Surrounding this may be many small warts, at times as many as twenty-five or thirty. These may have a vesicular appearance and are painful. They occur in adolescents.

In the mosaic wart the character of the border of the patch is most diagnostic, and the wart cells are grouped in a mosaic pattern. The border is diffuse and not sharply marginated. Small individual warts may be seen near the border of the larger patch. The capillaries in the warty core which come to the surface do not flare out as in the common type of plantar wart.

It is most important to differentiate the neurovascular corn from plantar warts and the hard corns occurring on the sole because of its resistance to most therapy. The neurovascular corn is intensely painful and is located beneath a prominent metatarsal head, usually the first or the fifth. Hypertrophied blood vessels may be seen through the transparent horny surface, lying parallel with the surface.

In plantar radiodermatitis there is a history of previous irradiation of the involved tissue. Scarring or ulceration is present. Various sized capillaries come to the surface of the horny area, which seems to be divided by the scarring into horny "islands" of various sizes and shapes.

SUMMARY

The common hyperkeratotic lesions of the feet include callus, hard, soft and neurovascular corns, warts and plantar radiodermatitis. Differentiation of these simple lesions and their proper treatment as outlined in this paper would prevent many unfortunate sequelae.

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BENIGN AND MALIGNANT TUMORS OF THE FOOT

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The division of tumors into benign and malignant provides a convenient but not wholly accurate means of classification. Neoplasms which remain localized to the site of origin are regarded as benign, while those which invade the surrounding tissue and metastasize are termed malignant. Certain benign tumors, however, may at times assume the clinical and the histologic characteristics of malignant tumors and conversely some usually regarded as malignant may in their clinical course be essentially benign. Furthermore, if the differentiation is based on the histologic features, more particularly the increased capacity of the tumor cells for proliferation, some tumors—for example, basal cell epithelioma—while displaying all the microscopic characteristics of malignancy are relatively benign in their clinical behavior. So the clinician, and even at times the pathologist with the tissue actually before him, has difficulty in determining whether the neoplasm should be regarded as benign or malignant. These limitations and criterial inadequacies for neoplasms in general apply equally to tumors of the foot, particularly as to the differentiation in the strictest sense between benign and malignant new growths.

Tumors of the foot, like those of the hand, differ from neoplasms elsewhere, as Pack [1] and others have pointed out, in being frequently multiple. This multicentricity of origin is due to several factors. Many tumors are congenital in origin although they may not appear until later life, while others develop symmetrically because of predisposing causes or a metabolic disturbance as, for example, xanthoma. In regard to some, as Kaposi's idiopathic hemorrhagic sarcoma, the reason for the multicentric origin is not as yet understood, although the presence of constitutional factors is recognized. Except for this multicentric tendency, tumors of the foot have for the most part the clinical features of neoplasms in general. The frequent and repeated trauma that the foot is subjected to may produce pain in lesions ordinarily asymptomatic or, as in melanoma, provide the stimulus for or accelerate the rate of transformation of a comparatively benign or potentially malignant lesion to one actually malignant.

Sporadic lesions occurring singly or as a part of generalized sarcoidosis or of lymphoblastoma (lymphosarcoma, mycosis fungoides and the leukemias) may appear on the foot. Similarly metastasis from a neoplasm elsewhere is at times encountered. The periostitis, osteoperiostitis and osteitis of late syphilis, while not tumors in the strictest sense, may simulate tumors. Syphilitic osteomyelitis of the bones of the foot may extend to the subcutaneous tissues and lead to the appearance of gummatous lesions in the skin. The nodular and nodular-ulcerative lesions of late syphilis on the foot must be differentiated from true neoplasms. Likewise, tuberculosis originating primarily in the skin

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1. Pack, G. T.: Tumors of the Hands and Feet, Surgery 5:1 (Jan.) 1939.

or extending from infection of the small bones of the foot may assume the clinical appearance of new growths (fig. 1).

Most of the benign new growths appearing in the skin or in the subcutaneous tissues elsewhere are at times found on the foot. Fibromas, lipomas, neuromas, myomas, keloids, the lesions of Recklinghausen's disease, molluscum contagiosum, various types of nevi and sebaceous cysts, aside from the discomfort caused by pressure, present essentially the same problems of diagnosis and management as similar lesions elsewhere. In this review are included only those tumors which frequently are seen on the feet or which, because of their location, present special problems in diagnosis and treatment.

Fig. 1.—Late nodular ulcerative syphilid on the dorsum of the foot. The advancing indurated arciform border is on the left; on the right the pigmented atrophic scarring is seen.

FOREIGN BODY GRANULOMA

Granuloma resulting from penetration of the skin by a foreign body is common on the foot, usually occurring on the plantar surface. The initial lesion is a somewhat hyperkeratotic nodule. Growing slowly, the nodule may reach the diameter of several centimeters and cause some discomfort in walking. It may be destroyed by electrocoagulation or, if large, may be excised. On microscopic examination the tumor is made up of round and epithelioid cells interspersed with foreign body giant cells.

PYOGENIC GRANULOMA

Granuloma of the pyogenic type occurs frequently on the foot, the most common site being about the sulcus of a nail. The lesion is soft, vascular and sharply demarcated from the adjacent normal skin and may be either pedunculated or sessile. Growth is usually rapid and may reach the diameter of a centimeter or more. Clinically the pyogenic granuloma simulates an infected angioma, although the differentiation is usually not difficult to make if one considers the history and the rapid development of the lesion. Small doses of x-rays or of radium usually cause rapid disappearance of the granuloma; if this therapy is not available, the tumor may be destroyed by electrodesiccation.

ANGIOMA

Various types of angiomatous tumors may appear on the foot. For some, as the glomus tumor, or angioneuroma, the foot is the most frequent site, while for others, as Kaposi's hemorrhagic sarcoma, it is frequently the site of the initial lesion. The great majority of angiomatous tumors are congenital in origin, and even in those appearing in later life the anlage has probably been present since early life. The many forms of angiomatous tumors, the difficulties of reconciling the histologic structure with the clinical course, the confusing nomenclature and the variable etiologic factors concerned, particularly as to tissue of origin, have contributed considerably to the difficulty of making a logical classification. The long existing confusion has recently been clarified somewhat by Oughterson and Tennant.[2] The difference in appearance, rate of growth and capacity to metastasize observed among angiomas of similar microscopic features becomes now, at least in part, understandable. Vascular tumors, according to Oughterson and Tennant, may be classified into three groups. The first group, the angiomas, includes the vascular malformations such as arteriovenous fistulas, the vascular nevi and the arterial, venous and lymphatic angiomas. Also included are the angioblastomas (hemangioblastoma and lymphangioblastoma), vascular tumors which are made up of rapidly proliferating cells and appear to be true neoplasms. The glomus tumors, or angioneuromyomas, comprise the second group, and the third is Kaposi's idiopathic multiple hemorrhagic sarcoma. The latter, despite the fact that its cause is unknown, is grouped among angiomatous tumors because of clinical and histologic similarities. Although they may be locally invasive and destructive and recur after attempts at removal, with the exception of Kaposi's sarcoma, the vast majority of the vascular tumors are not malignant in the sense that they metastasize generally or cause death. There have been, however, a few reports of metastasis from angioblastomas of the extremities (Ward and Jonas [3]).

Among the benign angiomas the most common are the vascular nevi. Frequently these are multiple, and usually they are present at or become evident soon after birth. Occasionally they may appear in later life and even in old age. The nevus, made up almost entirely of dilated blood vessels, may remain stationary or may grow at about the same rate as the body or at times with startling rapidity. With growth there may occur a displacement of the surrounding structures and at times even erosion of cartilage or bone. Benign angiomas may be in the skin, the subcutaneous tissues or the skeletal muscles or about the bones, the joints or the tendon sheaths. In the latter sites they may produce considerable pain and disability. In size they vary from a growth a few millimeters in diameter to a huge tumor involving the entire extremity. Either alone or in

2. Oughterson, A. W., and Tennant, Robert: Angiomatous Tumors of the Hands and Feet, Surgery **5**: 73 (Jan.) 1939.
3. Ward, G. E., and Jonas, A. F., Jr.: Metastasizing Hemangioma Simulating an Aneurysm, Arch. Surg. **36**: 330 (Feb.) 1938.

combination with lymphangiectasis they may produce grotesque and gigantic enlargement of the foot or of the entire lower extremity (fig. 2).

The appearance of benign angioma is dependent largely on the site and the extent of the lesion. In the common port wine mark, or nevus flammeus, the vascular dilatations are small and more or less on the same plane in the skin, and the surface is smooth and flat, usually dark red. The most common vascular nevus, hemangioma simplex, is raised and even at times pedunculated, the surface is usually slightly irregular and the color varies from bright to dark red. Cavernous angiomas differ from simple hemangiomas in that the blood filled channels are connected with angiomatous vessels. They are frequently deep seated and large, and the color is dependent largely on the depth, so that at times they may be barely visible as a bluish tracery beneath the overlying skin. If more superficially located they vary in color from dark red to reddish blue. The skin may be atrophic and adherent.

Many angiomas involute spontaneously, usually over a period of years. Treatment if feasible should, however, be begun as soon as the tumor is discovered. There is no satisfactory method of treating the superficial, or nevus flammeus, type, although the water cooled quartz mercury vapor arc lamp applied with pressure may at times lessen the disfigurement. The simple and the cavernous angiomas are easily treated with x-rays or radium, given usually in small and well spaced doses, or by the injection of sclerosing substances. A lesion not responding to these measures may be surgically excised and, if necessary, the defect repaired by a skin graft. Small lesions may be destroyed with solidified carbon dioxide or by electrodesiccation. With proper and careful treatment the results are usually most satisfactory.

ANGIOBLASTOMA

Included in the angioblastoma group are the angioblastic sarcomas, the angioendothelial sarcoma and the perithelial sarcomas. These tumors, despite their malignant clinical and histologic appearance, rarely metastasize, although they may be locally invasive and destructive. The tumor nodules are red or bluish red, vascular in appearance and frequently multiple. Larger lesions frequently ulcerate. The differentiation between the various tumors in this group is usually made by microscopic examination. If the lesion is small and readily accessible it may be excised, although irradiation, despite its limitations on the foot, is the simplest and usually an effective method of treatment.

ANGIONEUROMYOMA

Although first described many years ago angioneuromyoma, or the glomus tumor, has only recently received much recognition. In approximately one third of the cases it occurs on the lower extremity, the nail bed being the most frequent location. It originates from the neuromyoarterial glomus, is red or bluish red and small, seldom reaching a diameter of more than 1 or 2 cm. Growth is slow and not locally invasive. When the tumor is located beneath the nail the characteristic pulsating changes in color are less evident. While pain at times may be absent the glomus tumor is usually extremely painful, the pain being frequently paroxysmal and radiating in character, often initiated or aggravated by changes in the weather. The glomus tumor may be excised or destroyed by electrocoagulation. Microscopic examination reveals a well encapsulated lesion made up of muscle, nerve and vascular tissue (fig. 3).

KAPOSI'S SARCOMA

Kaposi's idiopathic multiple hemorrhagic sarcoma occurs for some unexplained reason preponderantly among males of the laboring class native of northern Italy, Russia and Poland. The cause, like the reason for the geographic distribution, is not known, although trauma is believed by some to be one of the factors. After much careful study Dörffel [4] concluded that the disease is primarily one of the reticuloendothelial system. The initial lesion, usually a small papule or nodule, is frequently on the leg or the foot. In the beginning the tumors are soft and vascular, but as they enlarge and coalesce to form red, reddish brown or bluish black plaques the tumor masses become firm

Fig. 2.—Enlargement of the lower extremity, including the foot, as a result of cavernous angiomas.

and often hyperkeratotic. Frequently the lesions are symmetrical and bilateral. They grow slowly and after a variable time spread over the skin and involve the viscera, particularly the lungs and the lymph glands. Hemorrhages from the lesions in the skin and the viscera frequently occur. Edema of the leg or the foot and elephantiasis-like changes may ensue. The rate of progression is slow and variable, and spontaneous remission and regression of the lesions may at times take place, leaving pigmented atrophic scars. The duration of life is on the average between five and ten years, death being due to intercurrent infection, cachexia, visceral involvement or repeated hemorrhages.

Irradiation may occasionally be followed by a seemingly permanent regression, but in most instances there are recurrences. Small doses of about 75 roentgens

4. Dörffel, Julius: Histogenesis of Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi, Arch. Dermat. & Syph. **26**: 608 (Oct.) 1932.

given at weekly intervals to the involved regions usually are effective, although for the more deeply infiltrated lesions larger amounts of filtered x-rays may be required. Arsenic in the form of solution of potassium arsenite or the intramuscular injection of solution of sodium arsenate is occasionally effective and should be used as an adjuvant to irradiation.

SYNOVIAL CYST

Originating from the synovial membranes of joints, tendon sheaths and bursas, cystic tumors are not uncommon on the foot. The most frequent sites are over the metatarsal-phalangeal articulations. The lesions are small, either nodular or globoid and at times hyperkeratotic over the surface. Usually they are painless, although at times they may cause some

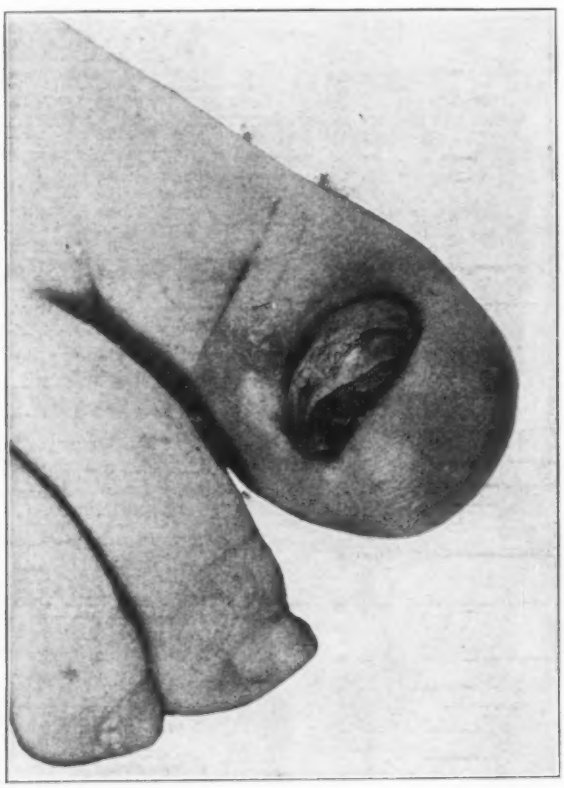

Fig. 3.—Angioneuromyoma, or glomus tumor, beneath the nail of the great toe (patient of Dr. L. R. Chandler).

discomfort. When punctured they exude a syrupy fluid. These cysts may be surgically excised, although recurrences are frequent. Irradiation is at times effective in causing them to disappear.

GANGLION

The ganglion, common on the foot, results from fibroplasia and colloid degeneration of a synovial membrane, a tendon sheath or occasionally a tendon. It is smooth, rounded, firm, frequently multiloculated and on palpation gives the impression of containing gelatinous fluid. Aspiration of the viscid fluid followed by injection of a sclerosing substance is a simple method of treatment. If this is ineffective the ganglion may be excised.

FIBROMA

On the foot fibroma may occur as an isolated lesion or as a part of generalized fibromatosis (Recklinghausen's disease). Occasionally it is found in close association with a tendon sheath or a joint capsule, but most commonly it is in the skin or the subcutaneous tissues. Fibromas vary in consistency from soft to hard and may reach a diameter of several centimeters or more. A variety of fibroma, histiocytoma cutis, which occurs most frequently on the extremities, has been described by Senear and Caro.[5] It is usually single, small, ovoid or round and either grayish brown or bluish red. Microscopic section shows this tumor to be made up of fibrous blood vessels, bundles and histiocytes filled with lipoid droplets and colloidal iron. Should treatment of a fibroma be necessary it may be destroyed by electrocoagulation, if small, or excised.

XANTHOMA

Tumors made up of lipoid containing histiocytes and fibrous tissue and resulting from a disturbance of the fat metabolism may appear on the foot, particularly on the plantar surface, as a part of disseminated xanthomatosis, as isolated lesions of xanthoma tuberosum multiplex or as large tumors involving tendon sheaths and joint capsules. Xanthoma on the skin appears as yellow-pink nodules varying from a few millimeters to one or more centimeters in diameter. Involution may follow and recurrences may be prevented by rigid restriction of fats in the diet.

The relation between xanthoma occurring as an isolated tumor in or about a tendon or its sheath or a joint capsule and the so-called giant cell tumor, or sarcoma, of these structures has been debated. The association of the latter tumor with xanthomas elsewhere, the frequent accompanying hypercholesteremia and the histiologic resemblances to xanthoma, including the presence of lipoid containing "foam cells," has led to the belief that the giant cell tumor is xanthomatous. On the feet the tumors appear commonly near the tendinous insertions as slow growing, usually painless, moderately soft or firm nodular masses. They may at times be attached to the capsule of the ankle joint. Destruction and invasion of the contiguous bony structures may occur, but the tumors are otherwise benign in their clinical course. Surgical extirpation is usually not difficult, although there may be recurrences.

MELANOMA

The capacity to produce pigment characterizes melanomas, although at times this is not exercised and the lesions are nonpigmented. In the strictest sense the term melanoma should be reserved for the highly malignant tumors originating in either the ectodermal or the mesodermal nevi. Lentigenes and pigmented and nonpigmented nevi, being ectodermal in origin, are the lesions from which melanocarcinoma originates, while the rarer mesodermal blue nevus is the precursor of melanosarcoma.

Approximately 15 per cent of all melanomas, according to Pack and Adair,[6] occur on the foot, and of these slightly more than 8 per cent are subungual. For some not as yet understood reason the incidence among Negroes is comparatively lower, and interestingly, when melanomas are present the sole of the foot, where pigmentation is least, is the most frequent site. The relation of melanoma and trauma to presumably benign nevi has been much discussed. While the history of injury to, or the attempt at removal of,

5. Senear, F. E., and Caro, M. R.: Histiocytoma Cutis, Arch. Dermat. & Syph. **33**: 209 (Feb.) 1936.
6. Pack, G. T., and Adair, F. E.: Subungual Melanoma, Surgery **5**: 47 (Jan.) 1939.

clinically benign nevi is often given, it may well be argued that the lesion was already malignant when the trauma occurred. Regardless of this controversy, in view of the high incidence of melanoma on the foot pigmented nevi should at least be carefully watched and if located in an area where friction and trauma are continual should for safety be excised, particularly if it is deeply pigmented or shows any evidence of growth.

In addition to increased pigmentation and growth the earliest signs of malignancy are an erythematous areola, a diffusion of pigment into the surrounding normal skin and a development of satellite nodules about the periphery. The rate of growth may at times be amazingly rapid until the tumor becomes a nodular mass with a broad or pedunculated base. The peripheral lesions likewise enlarge, and the individual tumor may reach the size of an orange; the surface frequently becomes ulcerated and covered with serous or purulent exudate. Metastasis to the regional lymph glands, to the internal viscera, particularly the liver and the lungs, and to the skin elsewhere is usually relatively early. At times diffuse melanotic pigmentation of the skin is the first evidence of generalization. Both the primary tumor and the metastatic lesions may occasionally be nonpigmented, in which event the diagnosis is made by microscopic examination (fig. 4).

The most common site of melanoma of the nail bed is the great toe. Because of the resemblance, this tumor was called "melanotic whitlow" by the older writers. Through the nail plate the pigmentation is at times difficult to make out. In the diagnosis of the lesions in an early stage the presence of the peripheral pigmentation is an important point. As the melanoma grows the nail plate is elevated and becomes thickened and fragile and eventually is destroyed to reveal a black, well demarcated fungating or ulcerating tumor.

The successful management of melanoma depends largely on early diagnosis and adequate removal. Suspected lesions should not be destroyed by cauterization with acids or the electrocautery but excised with a fair margin of normal skin for microscopic examination. Although some melanomas may be sensitive, irradiation should be used only as palliative therapy for advanced, inoperable lesions. The subungual tumor is best treated by amputation of the digit. A primary tumor elsewhere on the foot requires a radical excision carried down to the fascia, the cosmetic results being secondary to the thoroughness with which removal is carried out. When the diagnosis has been confirmed by examination of the tissue, a radical dissection of the regional lymph glands, whether enlarged or not, should be made either at the time of operation or very soon thereafter. While the prognosis is always unfavorable and a recurrence may suddenly appear after many years, the number of satisfactory results even in patients with regional metastasis is sufficient to warrant the attempt at a cure despite the extent of the surgical procedure.

CARCINOMA

On the foot primary carcinoma is relatively uncommon. It may originate from normal skin or from the scar of a burn, a discharging sinus, a keratosis or other benign lesion. Injury to the skin by mechanical friction or by irradiation may be a predisposing cause. Despite the frequency with which corns and calluses are found on the foot, carcinoma rarely originates from these, as Mason [7] and others have pointed out, indicating that repeated chronic irritation must be a minor factor. Likewise, for some unexplained reason, carcinoma seldom develops in chronic varicose ulcers (Tenopyr and Silverman [8]). While occasionally transitional or basosquamous cell carcinoma may be found, by far the most common is the squamous cell variety, usually of a relatively low grade of malignancy (group 1 or 2, Broders).

The early lesion is usually a firm indurated nodule with a scaly dry, almost parchment-like surface; at times it may be hypertrophic with a verrucous surface over which dilated capillaries traverse. Growth is usually slow, and ulceration may not appear for several or more years. Eventually, if untreated, the cancer becomes a large malodorous ulcer or a fungating mass,

Fig. 4.—Melanoma on the dorsum of the foot. About the periphery of the large primary tumor are smaller pigmented satellite lesions.

frequently secondarily infected and extending to invade the underlying tendons, muscles and even bones. The regional lymph glands become enlarged, usually after several years or more, although this may be due to secondary infection and not necessarily indicative of metastasis. Metastatic lesions appear in the viscera, particularly in the liver and the lungs, and in the skin. For diagnosis and as a guide in therapy a biopsy should be made even though the clinical appearance may be so typical as to make it seem superfluous.

Except for small lesions and the rarer, more sensitive group 3 and 4 cancers, excision is to be preferred to irradiation in the treatment of carcinoma of the foot. Most of the lesions are relatively resistant, requiring large and destructive amounts of radiation. This, when given to regions where impairment of arterial and

7. Mason, M. L.: Carcinoma of the Hands and Feet, Surgery **5**: 27 (Jan.) 1939.

8. Tenopyr, Joseph, and Silverman, Irving: Relation of Chronic Varicose Ulcer to Epithelioma of the Skin, Based on Records of Over 1,000 Chronic Leg Ulcers, Ann. Surg. **95**: 754 (May) 1932.

venous circulation is common, particularly in the age group in which cancer usually occurs, frequently results in ulceration and necrosis with prolonged healing. Surgical excision with either primary closure or repair of the defect by an intermediate thickness graft is usually the preferred method of treatment. For the larger invasive and fungating cancer the removal of which results in extensive mutilating defects, amputation is at most times advisable. Carcinoma of a toe is usually best treated by amputation of the digit.

Frequently it is difficult to decide whether a radical dissection of the regional lymph glands should be made. Secondary infection in the tumor may be responsible for the enlargement and may simulate metastasis. Invasion of the lymph glands in the absence of palpable enlargement is rare, according to Mason. If palpable lymph glands are present a radical dissection should be done, as 50 per cent of the enlargements will be due to metastasis.[7] Similarly a prophylactic dissection should be made when the primary lesion is deep and invasive or is so extensive as to necessitate amputation.

SARCOMA

Sarcoma is relatively uncommon on the foot. It may originate in connective tissue, muscle, nerve, tendon, tendon sheath or synovial membrane. From these, various types of sarcoma including fibrosarcoma, liposarcoma, myosarcoma, fibroneurosarcoma and synovioma are derived. The most common is fibrosarcoma, which appears first as a small, well circumscribed nodule that grows slowly to become a reddish nodular tumor. Ulceration is uncommon and, though the tumor is locally destructive and invasive, metastasis seldom occurs. Occasionally fibrosarcoma may assume the histologic characteristics and the clinical course of the highly malignant tumors. Dermatofibrosarcoma protuberans is a variety of sarcoma which may occur on the foot. Beginning as a small, flat, firm cutaneous or subcutaneous nodule it gradually enlarges to become a large blue or brownish sessile or pedunculated tumor. Although the tumor mass may reach considerable size, ulceration and metastasis rarely occur. At times regression and even involution may take place spontaneously.

Several types of sarcoma may originate in synovial membranes, tendon sheaths and tendons. The tumors usually manifest themselves as either slow or rapidly growing painful enlargements beneath the skin. Frequently there is a history of single or repeated trauma. In this group are included synovioma, arising from the synovial membrane, spindle cell sarcoma of the tendon sheath and joint capsule, whose origin may be difficult to determine, and sarcoma of the plantar fascia.

The diagnosis and differentiation between the various types of sarcoma are made largely by microscopic examination of the tissue. With the exception of lymphosarcoma, most of the neoplasms in this group are notably insensitive to irradiation. At times, however, irradiation is used in conjunction with the surgical removal of a deeply invasive tumor. The less malignant and early lesions may be radically excised and carefully followed for evidence of recurrence. Extensive and rapidly growing tumors, even in the absence of regional and pulmonary metastasis as well as recurrence, necessitate amputation, the resection being usually made at the junction of the upper with the lower two thirds of the leg.

In the management of sarcoma of the foot the fundamental principles that underlie the treatment of neoplasms in general should be followed. These are adequate diagnosis, which in most instances includes microscopic examination of the tissue, adequate treatment and adequate follow-up over a period of years.

450 Sutter Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MADDEN, NOMLAND, CARO, R. M. AND A. H. MONTGOMERY, AND KULCHAR

DR. R. C. JAMIESON, Detroit: The difficulty in diagnosing foot lesions which has been mentioned by Dr. Madden cannot be too strongly emphasized, as all lesions on the feet are "athlete's foot" to the layman. Consequently many proprietary preparations acquire an unjustified reputation for being a "cure" for fungous infections which were never properly nor correctly diagnosed. Many cases of dermatitis of the feet are aggravated or initiated by the use of woolen socks as well as by continued use of oil and water soaked shoes and to these can be added the use of home remedies, especially some of those publicized in lay magazines, which are potentially dangerous. Patients should always be warned to sterilize shoes with formaldehyde vapor and not put the liquid in the shoes. Contact dermatitis is not usually seen by the dermatologist until after the use of many fungicidal remedies, and it is then difficult to determine the origin; but the location of the original dermatitis should give the clue as to whether it is of fungous origin or not. The problem of psoriasis of the feet is interesting and usually difficult, especially when the nails are involved and there are no lesions elsewhere on the body. Psoriatic nails are usually dismissed or treated as fungous infections, and the tendency is to overtreat no matter what method is used. Excessive roentgen therapy is too often used, but on the feet it should be used even more cautiously than elsewhere. I am rather pessimistic about the ease of cure of neurodermatitis of the feet, as many resist everything—x-ray and local treatment of all forms. The greatest caution should be used in the treatment of plantar warts by roentgen rays. Many such warts require far more treatment than is safe to give and in a few cases malignant growths have resulted. In my judgment now it is wiser to use remedies not so potentially dangerous.

DR. PAUL A. O'LEARY, Rochester, Minn.: Although thromboangiitis obliterans is not observed exclusively among cigaret smokers, it is nevertheless advisable to have patients suffering from this disease discontinue smoking entirely. Occasionally in mild types of cases the elimination of cigarets will modify the symptoms considerably, and the few women I have seen who had thromboangiitis have been heavy smokers. The influence of the ill effect of the cigaret paper rather than the tobacco has led to suggestive but not conclusive deductions. The arctic explorers and northern woodsmen have long known that, when their hands or feet were badly nipped by the cold, if they rubbed the affected extremities gently with snow but not with ice they had less pain than if they did not do this. The temperature of snow is not as low as that of ice, and the gentle rubbing and massage, which must not be vigorous, are of help. When blisters appear a day or more after exposure, the treatment is similar to that of a second or third degree burn by the use of boric acid ointment, sterile dressings, rest, elevation and so forth. The application of cool wet dressings is more comfortable than that of heat, especially when secondary infection occurs. Livedo reticularis is a fairly common disease. It is characterized by blotchy and reticulated blueness of the extremities and is seen most often among young women. It is associated with varying degrees of dyshidrosis and can be distinguished from the occlusive vascular diseases by the absence of occlusion of the vessels. The network of lividity usually found between the ankles and the knees is characteristic. Exposure to cold aggravates the condition, as do emotional upsets. Recently Barker, Hines, Craig and others have reported successful results following sympathectomy in cases in which ulcerations of the legs and feet had developed. The mild types

of livedo reticularis are common and usually can be controlled by avoidance of undue exposure to cold; no medication has been helpful, as the cause of the disease is unknown. My observation of patients suffering from the combination of sclerodactylia and Raynaud's disease to which the term acrosclerosis has been applied has led me to believe that it is an entity allied to Raynaud's disease in contradistinction to scleroderma but quite distinctive from the former in a number of ways. Sympathectomy has been of help in these cases for short periods only, that is, one or two years. In many cases the disease is arrested spontaneously, resulting in atrophy of the subcutaneous tissues rather than of the skin. The arrest usually is accompanied by a considerable decrease of the vasospastic phenomena. In the severe forms of acrosclerosis, extensive gangrene resulting in spontaneous amputations of the digits has not been controlled by any of the measures used in overcoming spastic diseases of the blood vessels or sclerodermatous infiltrations. To say that these patients have scleroderma associated with Raynaud's disease is getting the cart before the horse, because the fundamental process appears to be in the blood vessels, not in the skin, and the degree of cutaneous sclerosis, although it is what the patient complains of, is of secondary significance.

DR. GEORGE C. ANDREWS, New York: I regret that the roentgen technic employed by the Montgomerys is not given in greater detail. Mention of the roentgen unit technic alone without giving the voltage and filtration is incomplete. In my opinion the so-called mosaic wart is an advanced type of growth in which multiple warts have coalesced into a patch. It is natural that this type is more difficult to treat than single and smaller lesions. Some mosaic warts occur on the convex aspects of the heels, so that equable distribution of dosage is not easy. However, I have cured too many of them by x-ray treatment or by a combination of electrodesiccation and intramuscular injections of bismuth to give up these methods. If acid treatment is to be used, I prefer to remove the mosaic wart by desiccation and to apply the acid to the base if any spots cause one to suspect a recurrence. This method shortens the treatment and, in my experience, is less painful than the treatment by acid alone. As to the etiology of corns and their tendency to localize on the outer side of the small toe, I would like to suggest another cause in addition to those mentioned by the authors. If one will examine the inside of almost any stocking or sock, one will find a piece of redundant thread at the outer end of the seam. This thread is often ½ to 1 inch in length. It has a tendency to become wound into a hard little ball which rests on the outer surface of the small toe, into which it is pressed by the shoe. I suspect that many corns are caused in this manner. Squamous cell epithelioma of the foot is extremely rare. I have seen 2 cases in ichthyosis hystrix (horny epidermal nevus). Arsenical epitheliomas occur more often in the hands than on the feet. I am glad that Dr. Kulchar emphasizes the fact that hemangioendotheliomas, despite their histologic features that may suggest a type of sarcoma, are really not malignant and, if thoroughly removed, do not recur.

Hospital Room Construction.—In parts of the United States where hospital planning is regulated by local legislation the minimum cubic space allowance for patients in public wards is only 800 cubic feet. With the existing tendency to the use of low ceilings, say 10 feet in height, an allowance of 800 cubic feet per patient corresponds to 80 square feet of floor space per bed. American authors usually propose the more liberal standard of 1,000 cubic feet. A private room based on the minimum requirement of 800 cubic feet would measure only 8 by 10 feet, but rooms so diminutive are extremely rare. Rooms 9 feet 6 inches by 13 feet, 10 by 14 feet, 10 by 15 feet and 11 by 16 feet are more common. De luxe rooms are, of course, larger. These measurements do not include the private or individual toilets or baths that are nowadays so widely used, not so much for the patient's comfort as to facilitate nursing service.—The Hospital in Modern Society, edited by Arthur C. Bachmeyer and Gerhard Hartman, New York, Commonwealth Fund, 1943.

THE CONCEPT OF ORGANIC UNITY AND PSYCHOSOMATIC MEDICINE

GEORGE DRAPER, M.D.
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From earliest times, physicians have been embarrassed by what seemed to be two separate phases of man. One of these, ponderable and physically tangible, has been called the body or soma; the other, termed psyche, imponderable and invisible, likewise appears as an immensely powerful factor in his being.[1] What the relationship of these two aspects of the creature might be, and how they may interact, has been a point of controversy throughout the history of medicine. One thing about them, however, has been definite: They are both, in some way, included in the individual animal unit. The term "psychosomatic medicine" was coined with the intent of bringing the parts together. Unfortunately, the two-pronged word does not adequately succeed in establishing the connotation of biologic unity. It still implies that the two parts, each with complete independence, work reciprocally on each other. This belief does not satisfy sound biologic tenets, and it tends to oversimplify the science and art of clinical medicine.

The infinite complexity of any living organism is a challenge to man's usual habit of finite thinking. Therefore, in the attempt to understand even a one-celled animal, it has been divided into the cytoplasm and nucleus. But when we strive to reassemble the creature so that it functions properly again, we still find ourselves in the frustrated company with all the king's horses and all the king's men. Moreover, when through special interest the focus of an investigator's individual attention becomes fixed on a part, the latter grows for him in significance until it often attains the power of a dominant minority. And beyond these considerations we are faced with the age-old problem of the relative significance to human beings of the terms mind and matter. Where does the physical body end and consciousness begin? Or does the latter exist free in the cosmos and pounce demon-like or godlike into the prefabricated animal carcass? It is not my purpose in this essay to carry on that discussion. But it is necessary to point out that the only way in which man has been able to deal with the imponderable forces which he has sensed to be present, either within or about him, is by abstract words or symbols. There is, however, a peril in this process, the danger that the possible, wished for or probable reality for which a given abstraction stands may be obscured by the poignant connotation of the symbol itself, which then takes on the fixed nature of a reality. This widespread insensitiveness to, or misinterpretation of, symbolic impact has perhaps been one of the great obstacles to a prompter, wider acceptance of any threat to traditional standard beliefs. Furthermore, in the very term "psychosomatic" the same danger still lurks about the first half of the Janus-faced word. Even the hybrid contraction "psysomatic" [2] is unhappy, coined as it was in order to connote, at least by the elimination of one syllable, a more intimate relationship between mind and body. And so, as studies in human constitution

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1. Some of the material in this article is also presented, but often differently phrased, in the book entitled Human Constitution in Clinical Medicine by the same author and published by Paul B. Hoeber, Inc., the Medical Department of Harper and Brothers, New York, 1944.

2. Draper, G.: Disease—A Psychosomatic Reaction, J. A. M. A. **90**: 1281 (April 21) 1928.

have proceeded,[3] increasing dissatisfaction has developed with the term psychosomatic. By virtue of its structure it still implies a dichotomy, criticism of which was earlier implicit in Jelliffe's [4] phrase "psychosomatic monism." Consequently, until a chemical and physical formulation is achieved which will explain the two expressions of energy which are now called reason and emotion on the one hand and somatic physical phenomena on the other, we are inevitably constrained to use abstractions for things sensed but imponderable and unknown. We shall have to accept frankly the statement of William James that "All our abstracts must be confessed to be but imperfectly imaginable things."

It is because of the foregoing difficulties and dangers that somatologists and psychologists together have recently been passing through what might be called "jamming" operations. The significance of that figure will at once be apparent to any one who has observed the capillary blood flow in a frog's foot. There one sees the individual corpuscles being tumbled along by the inexorable current, all hurtling in the same direction. They stumble, one after the other, sometimes in single file, some rudely passing others or establishing an impasse at forks in the tubing. But such controversies usually arise from misunderstanding of the meaning of meaning.[5] Actually, psychiatrists and internists alike are pursuing the same objective, namely the nature of the man within the patient. Perhaps recourse to the natural historian's point of view may be of value in clearing the air.

THREE CONCEPTS

In the early part of this century a group of observers, including such men as E. B. Wilson, F. R. Lillie, Jacques Loeb, F. E. Ritter, T. H. Morgan, C. M. Child, E. G. Conklin and R. G. Harrison, broke away from what had been called the elementalist school and, following Aristotle, considered the living creature to be greater than its parts and sought to examine the organism as a whole. There were three essential concepts which emerged from this philosophical discipline. The first of these was well stated by Child.[6] "Each living thing," he wrote, "represents an order and unity of some sort, maintaining itself with more or less success in a changing environment." For the second Ritter [7] then insisted that the material substratum of life is not a single chemical individual or substance, protoplasm, but actually many protoplasms. Differing qualities of these protoplasms are inherent in the cells and therefore must represent genetic biologic substrates which inevitably determine first the differences between species, then, more subtly, those between individuals of the same species, and finally those between all organs and tissues within the individual. This notion is supported by the experiments of H. V. Wilson,[8] which demonstrated the failure of fusions between mixed cells of different species. And the principle is further illustrated by Leo Loeb [9] and by Morgan [10] in their studies on grafting and fertilization, which have shown that "the results are more successful for unions between closely 'related' forms than between distantly 'related' forms." Furthermore, it is well known to surgeons that homologous grafts are essential to the surest success. Leo Loeb regularly uses the phrase "individuality differential" as determined by the varying behavior of autotransplants, homoiotransplants and heterotransplants. Indeed, he speaks of transplantation as "an instrument for the analysis of individuality."

The third concept, that concerned with internal environment, may be divided into two parts, the humoral and the cellular. The former, probably first demonstrated by Claude Bernard in 1859, has recently been brought strikingly to mind again by Cannon's [11] emphasis on the circulating fluid elements of the body. This inner fluid environment is remarkable for its stability. Moreover, it serves to ensure by fluid bonds E. B. Wilson's [12] tenet that the real unity is that of the entire organism. "As long," he writes, "as its cells remain in continuity, they are to be regarded, not as morphological individuals, but as specialized centers of action into which the living body resolves itself and by means of which the physiological division of labor is accomplished."

The second part, that which deals with the reciprocal effects of neighboring cells and tissues on one another, has been fully reviewed by Ross G. Harrison.[13] Moreover, these effects appear to be subject to orderly processes within the cell. For, as Conklin [14] says, "There is something in the organization of the individual which makes it more than just the sum of its parts." And the presence of these orderly and specific processes within the cell can be explained only by genetic transmission.

Thus, for example, when the egg of a frog is turned, there is manifest rearrangement of its constituents. The cortical layer which holds most of the pigment and chief part of the gray crescent remain in position. But the main mass of the heavy white yoke rotates as a unit. In other words, turning the egg does not result in an indiscriminate mixing of the elements but in an orderly rearrangement which may result in a normal embryo. When the egg is inverted, at the two cell stage, the rearrangement takes place independently in the two cells, and twins may develop. Consequently, it appears that even in its earliest period development is affected by the interaction of cell constituents according to an orderly topographic arrangement.

ORGANISMIC POINT OF VIEW

The notion of specialized centers of action advanced by Wilson as an interpretation of the cell is reflected in the discoveries of Vogt,[15] of Spemann [16] and of Coghill.[17] Vogt showed by means of appropriately applied dyestuffs that early amphibian embryos are composed of a mosaic of discrete cell masses and that each one of these cell blocks goes on to the formation of a specific adult part or system. The predestination

3. Draper, G.; Dupertuis, C. W., and Caughey, J. L.: Human Constitution in Clinical Medicine, New York, Harper & Brothers, 1944.
4. Jelliffe, S. E.: General Reflections on Psychosomatic Monism, New York State J. Med. **39**: 1017, 1939.
5. Ogden, C. K., and Richards, R. K.: The Meaning of Meaning, New York, Harcourt, Brace and Company, Inc., 1938.
6. Child, C. M.: Physiological Foundations of Behavior, New York, Henry Holt & Company, 1924.
7. Ritter, W. E.: The Unity of the Organism, Boston, Richard G. Badger, 1919.
8. Wilson, H. V.: On Some Phenomena of Coalescence and Regeneration in Sponges, J. Exper. Zool. **5**: 245, 1907.
9. Loeb, L.: Transplantation and Individuality, Physiol. Rev. **10**: 547, 1930.
10. Morgan, T. H.: Experimental Zoölogy, New York, Macmillan Company, 1907.
11. Cannon, W. B.: The Wisdom of the Body, New York, W. W. Norton & Company, Inc., 1932.
12. Wilson, E. B.: The Mosaic Theory of Development, Woods Hole, Biological Lectures, 1893.
13. Harrison, R. G.: Cellular Differentiation and Internal Environment, in The Cell and Protoplasm, Publication 14, American Association for the Advancement of Science, 1940.
14. Conklin, E. G.: Heredity and Environment in the Development of Men, Princeton, 1922.
15. Vogt, W.: Eine Methode lokalizierter Vital-färbung an jungen amphibien Keimen, München. med. Wchnschr. **26**: 361, 1923.
16. Spemann, H., and Mangold, H.: Ueber Induktion von Embryonalanlagen durch Implantation art fremden Organisatoren, Arch. f. Mikr. Anat. u. Entwcklungsgesch. **100**: 499, 1924.
17. Coghill, G. E.: Anatomy and the Problem of Behavior, New York, The Macmillan Company, 1929.

of each block apparently is constant, so that the presumption seems justified that this segment of the embryo will develop, for example, into liver, that into heart and another into central nervous system. But then Spemann found that if presumptive abdominal skin from one gastrula was transplanted into the region of the future medullary plate of another the transplanted skin developed into some part of the central nervous system. It is as though the gastrula receiving the transplant forced the transplanted cells into subservience and conformity with the needs of the complete host organism. Still more impressive support for the organismic point of view is found in Coghill's studies of the behavior of Amblystoma embryos. He traces the development of body movements from the nonmotile to the adult stage in relation to the growth of the central nervous system. At one point in his argument the following passage occurs: "In like manner, the tissues of the tongue receive branches from motor neurons that are engaged in integrating the trunk long before the tongue has muscle tissue in it. It is, therefore, the potentiality of the functional neuron to grow in embryonic fashion that gives to the organism as a whole its ability to subjugate new parts and thereby maintain its unity during the development of behavior. Such growth of the already conducting neurons accomplishes, then, the primary function of the nervous system, the maintenance of the integrity of the individual while the behavior pattern expands." Jelliffe [4] has nowhere better displayed his grasp of the forces of growth and development in relation to constitution and the purpose of life than in the following sentence. Discussing Tilney's work on the development of the central nervous system, Jelliffe writes ". . . all of which shows how from the earliest forms the organism grew in response to future opportunities." [4]

Implicit in such observations of growth plan and pattern is the notion concerning body image suggested by Schilder [18] and recently supported by Bruch [19] and by Coghill [17] himself. These authors concur in the belief that our bodies—indeed our whole personalities—have grown into images to ourselves of what we believe ourselves to be. "This image is built up in ourselves," writes Schilder, "in accordance with our instinctive attitudes;" while Coghill, the embryologist, considers man as "a mechanism which, within the limitations of life, sensitivity and growth, is creating and operating himself." Moreover, as Bruch points out, obese children, whose clinical problem is one of disturbed nutrition, "derive security satisfaction from the static fact of size alone." My own observations on total personality show that, in their morphology and behavior, peptic ulcer patients, also food problems in a way, are the very opposite of the obese. The ulcer bearer's best hope lies in hard effort, however useless or misdirected, to recapture that security which he first knew in infancy.[3]

Another interesting illustration of the principle of organismic unity drawn from the fields of immunity and pathology is seen in the recent observations of O. H. Robertson [20] on the behavior of pulmonary alveolar epithelium during pneumonia. These cells in health perform the highly specialized function of aiding in the exchange of gases between air and blood. During pneumonia Robertson observed that they take on a vigorous phagocytic action and are largely occupied in the successful resolution of the pneumonic lesion. It is as though at the call of the organism (or nation) fixed or sedentary factory workers enlisted in the capacity of shock troops for the good of the whole.

18. Schilder, P.: Image and Appearance of the Human Body, Psyche Monographs, no. 4, London, Kegan Paul, French, Trubner & Co., Ltd., 1935.
19. Bruch, H.: Obesity in Childhood and Personality Development, Am. J. Orthopsychiat. **11**: 467, 1941.
20. Robertson, O. H.: Personal communication to the author.

ANDRIC AND GYNIC DIFFERENCES

There is still another set of forces within living organisms whose task concerns the complex relationships of individual and race survival. As far as perpetuation is concerned, the erotic phase of sex and the opposing genital apparatus of the two sexes adequately protect mankind from the threat of species extermination. At an earlier stage in the animal phylum, however, this danger was met by the simpler process of division, which resulted in two or more offspring, each an identical replica of the single parent. But with the establishment of bisexual reproduction, elaborate differences arose in body form and physiologic economy, characteristic for each sex. These differences are not limited to the generative organs. But throughout the entire organism, this other, or extragenital, sphere of sex is expressed as a commingling of masculine and feminine characters, known as the mosaic of androgyny.[3] The andric and gynic components of this mixture are distributed in varying proportion throughout the four panels of personality. The arrangement is present in every individual of either sex and plays an important role in the organism's task of self preservation. Space does not here permit a full discussion of the remarkable circumstance of maleness within the female and femaleness within the male. But it can be said that the pervasive intermixture of those two supposedly opposite biologic qualities is far more definitely and delicately balanced in the protoplasmic field than the split "psychosomatic" concept itself. There are indications now, however, that the andric and gynic differences are not opposite in character but rather covariant with different degrees of fat-muscle ratio and of oxygen consumption rates. In the matter of morphology alone the range of form from andric to gynic and the reverse is very wide.

PERSONALITY

Thus far this discussion has dealt only with the physical and physiologic qualities of protoplasms. But every one is aware that even the most lowly forms project on our consciousness an unmistakable flavor of identity. Concerning his own species, man usually speaks of the effect of this projection as the impact of personality. Moreover, because it imponderably leaps the space between its origin and the observer, we usually designate this force as a psychologic phenomenon. But the direct physical impacts of fistic blows, for example, from Joe Louis, General Tom Thumb or Einstein likewise possess easily distinguishable personal qualities.

It was because of such questions that studies in human constitution have of necessity been extended into the sphere of the psyche. Now this word, which forms the common root of psychology, psychiatry, psychotherapy and the bisecting term "psychosomatic," holds different meanings for many people. In an effort to discover what some of these connotations might be or how many men recognized a similar interpretation of the word "psyche" a questionnaire was sent to a number of physicians in each department at the Columbia-Presbyterian Medical Center. The query was simply "What does the word 'psyche' in relation to disease connote to you." The responses were varied and ranged from intentional absurdities to interested and suggestive

thoughts. Indeed, an analysis of them would form an illuminating commentary on the points of view of various general and special workers in medicine and surgery. But a discussion of this questionnaire is not in order here. It must suffice to state the formula which has been long in use at the Constitution Clinic. It follows: "The term 'psyche' in relation to disease connotes that quality which distinguishes a living cell or organism from a dead one. It springs with the first impregnate cell, and from the first division permeates every tissue of the entire creature, just as it vanishes in death. Psyche therefore is the life force. And this vitality is manifest only through protoplasmic response to outward or inner stimuli. Hence, in conjunction with innumerable agents of environment, the vivified or psychefied protoplasm becomes one of the two essential factors which together produce different aspects of health and disease."

If we accept this definition of psyche, then there remains no question of the unity of the organism. We can only envision different tissue protoplasms all imbued with the same vitality interacting with one another, and the various tissues and organ systems responding in harmonious synergy to achieve whatever objective at the moment best serves the need of the individual animal itself, of which they all are parts. Any disturbance of this animated accord becomes the gateway to sickness.

That such disturbances find different expressions in different individuals who are afflicted with the same disease is well known. Thus, from time to time in acute rheumatic fever one sees a variety of manifestations in addition to the classic fever, red swollen painful joints and elevated sedimentation rate. Dermatitis marginata, for example, is a well recognized form of eruption in the disease, but it does not occur with great frequency. In those individuals who do display it, however, it must be looked on as a special constitutional criterion of that person which includes dermal cells in the organismic reaction to the impact of the rheumatic agent. That such selective tissue-cooperation responses are definitely genetic functions of cellular protoplasms is well shown by Webster's [21] recent demonstration of the heritability of mouse brain susceptibility to the encephalitic virus.

MULTIPLE AILMENTS

In the field of internal medicine it is commonest to see patients who are subjects of one disease at a time. So that instead of the usual formula "Bill Smith 'has' pneumonia" we could perhaps more properly say "Bill Smith is partly or pretty much all pneumonia today." But there are a good many instances in which an individual patient may appear to be the subject of multiple ailments. These remarkable phenomena seem to demonstrate more forcibly than theoretical discussion the complex unity of human organism; a unity existing not only within the being of each one but also of that one within the time-spanning unity of the protoplasmic phylum.

In illustration of the foregoing notions, the following cases from the clinic are presented. The first, a married woman of 63, complained of small lumps on her face and body. The dermatologists told her they were subcutaneous fibromas which were inherited, "like birth marks." The only therapeutic offering was surgical excision. But as there were some two hundred of the objects scattered over her body, she decided against this procedure. Incidentally, she asked at the time what could be done to relieve various other ailments. These included double ptosis of the eyelids, a curious redundance of the scleral conjunctiva, fibroma of the uterus, mild diabetes, arteriosclerosis and occasional pain in the heart. The latter was interpreted as due to the coronary disease which eventually killed her. She was referred for each of these maladies to its appropriate special clinic, where in each instance the best treatment for that particular "disease" turned out to be unavailing. The explanation for such consistent failure, however, was found by a careful investigation of the woman's family history. It turned out that a condition of excessive overgrowth of mesodermal fibrous tissue was heavily sprinkled through the three generations studied.

The second patient, a married woman of 55, came to the hospital in a seriously ill condition. There had been a steady weight loss of 44 pounds (20 Kg.) in four years, increasing dyspnea for six months and dependent edema for four weeks. Salient points in her history were that she had insufficient food for four years as the result of economic pressure; eighteen months before admission she had developed sore throat, hoarseness and severe paroxysmal cough; recently her doctor told her that she had heart trouble; she brooded over money matters and expressed grave disappointment about her son's failure in life, and especially over his unfortunate marriage to a girl she could not tolerate.

The physical examination revealed a distraught, dyspneic woman, with rapid, overacting, totally irregular heart. The latter was slightly enlarged to the left, and there was an apical murmur. The liver edge was palpable. There were facial skin lesions of erythema multiforme. The laboratory findings proved a considerable degree of anemia; an electrocardiogram showing auricular fibrillation, a basal metabolic rate of + 57, a normal sedimentation rate and a 4 plus flocculation test (Hanger).

Tentative diagnoses of thyrothoxicosis, rheumatic heart disease, vitamin deficiency and liver damage were made. But later on the picture changed so that there emerged from the complex symptomatology a clearcut pattern of hyperthyroidism. Although at first the surgical risk was not too good, the patient's response to iodine justified operation at the end of two weeks. At this time she was greatly improved, apparently as the result of hospitalization, massive vitamin intake, high caloric diet, iodine therapy and growing sense of security. No attempt had been made to assist in the resolution of her daughter-in-law conflict.

In the first of these cases one is forced to the conclusion that a genetic fault in tissue growth prevented successful interaction within the internal environment—that is, the effect of cell upon cell. It is hard to conceive that the various symptom complexes—or diseases, if you will—could each have been due to a separate reaction between psyche, in the sense of morbid energy in the unconscious, and soma. Diabetes is well known to number emotional stimuli among its etiologic factors. In this case perhaps pinching of the islands of Langerhans by inherited excessive fibrous tissue may have played an important part in the curtailment of insulin supply. It is interesting, moreover, to observe that the basic lesion in this instance did not directly involve cells of physiologically active tissue. The parenchyma was mechanically reduced in efficiency by a slow-moving tissue, whose only evidence of vitality

21. Webster, L. T., and Johnson, M. S.: Comparative Virulence of St. Louis Encephalitis Virus Cultured with Brain Tissue from Innately Susceptible and Innately Resistant Mice, J. Exper. Med. 74: 489, 1941.

was its capacity for growth. What the effect of the attendant miseries were on this woman's emotional patterns is perhaps suggested by the vanity reaction to facial papillomas, and the sense of frustration dependent on her physiologic handicaps.

In the second case, on the other hand, the main disturbance was in the parenchymal cells of thyroid, heart, liver and perhaps digestive mucosa. These are all directly controlled by the autonomic nervous system and respond intensely to swift waves of fear, anger, jealousy. Signs and symptoms which arise from dysfunction of such labile tissue tend to change rapidly as the functional success or failure of the involved cells varies. Consequently, even at the end of but two weeks the patient had begun to gain weight, the electrocardiogram had returned to normal and her facial expression clearly displayed greater organismic placidity. But we are as yet unable to determine the precise patterns of interaction between the energy called emotion, the energy of the chemical substance called thyroid hormone and the energy of the active cells of heart muscle, gastrointestinal mucosa, liver and thyroid gland, from which her symptoms seem to have arisen. We do know, however, that the conflicts underlying this woman's adjustment to her life still go untreated.

Biologists would look on the multiple ailments displayed by each of these women as organismic phenomena; the latter would represent disturbances of relationship within the organism between all the different protoplasms; and these in turn would express the success or failure of both phylogenetic and ontogenetic ambitions. In the first case it would seem that better breeding, a long term preventive measure, would have held the only solution to her predicament. In the second case, on the other hand, it might be contended by psychiatrists that appropriate psychotherapy could have exorcised her demons. But her heart muscle tissue was already damaged and at the danger point, so that speed for its protoplasmic relief was of the essence. That is why a kind of material therapy appropriate to the presenting state of organismic pathologic change was used immediately. Later on, perhaps, some formal psychotherapy may be profitably added. But in any event the success of all-embracing organismic treatment will depend on wisdom and skill in the choice of sequence and emphasis on method. Some of the newer advances in organismic treatment are illustrated by shock therapy.[22] Ever since the early use of insulin in dementia precox the powerfully reorienting influence of protoplasmic convulsion on abnormal emotional states has been studied with increasing interest. Now that the electric shock has almost supplanted insulin, the results of such treatment for "psychic disease" have become more and more impressive. Indeed, in some cases the method seems able to accomplish in the twinkling of an eye, through effects on a wide variety of protoplasms, what many months of psychotherapy barely achieve at great cost in money, time and mental anguish for the patient. The phenomenon again supports the biologic concept of living protoplasms in continuity subserving an integrated and vital whole.

ORGANISMIC UNITY

In our current professional phrasing we are by now, no doubt, inexorably committed to the word psychosomatic. The precariousness in the use of the term, however, lies in the fact that its hoped for symbolic connotation of unity may be lost in the false belief that two separate parts in man actually do exist. Consequently, if we examine closely the structure of organismic unity which doctors nowadays seem to be striving so hard to preserve for the individual we may find perhaps that its division resides in a contemporary medical attitude and not within the animal at all.

620 West 168th Street.

22. Nolan, D. C. L.: The Present Status of Shock Therapy of Mental Disorders, Bull. New York Acad. Med. **19**: 227, 1943.

SPLENECTOMY IN PREGNANCY COMPLICATED BY THROMBOCYTOPENIC PURPURA HEMORRHAGICA

REPORT OF A SUCCESSFUL CASE, WITH A REVIEW OF THE LITERATURE

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The patient who is the subject of this report was referred to me by Dr. M. S. Joelson when she was in her sixth month of gestation. Her chief complaints were those of widespread ecchymoses, epistaxis, hemoptysis and hematuria. Various consultations were held, a diagnosis of thrombocytopenic purpura hemorrhagica was established, and splenectomy was performed by me in the eighth month of gestation. She was delivered normally of a normal baby by Dr. Joelson about two weeks prior to estimated term. I believe this is the first case to be reported of splenectomy in pregnancy complicated by thrombocytopenic purpura hemorrhagica.

The seriousness of this complication of pregnancy is attested by the literature. Sixty-one cases have been reported singly or summarized in groups between 1867 and 1936. Mosher [1] in 1923 reported a case of his own and collected 39 other cases. He concluded that the complication of thrombocytopenic purpura hemorrhagica in pregnancy was harmful in that it was usually associated with premature delivery in the sixth or seventh month of gestation, that infection was usually superimposed on it, that the fetal mortality was 50 per cent and that the maternal mortality was nearly 100 per cent from postpartum uterine bleeding.

Of the 47 cases collected by Rushmore [2] in 1925 the final results with respect to the mother were recorded in 44. Of these, 26 mothers died (58 per cent). Of the 42 cases in which the final results for the infants were recorded, 27 infants died (64 per cent). Rushmore cited Puech's case in which the mother went into labor in the sixth month of gestation. Uterine bleeding continued following delivery, and the patient died from exsanguination on the second day of the puerperium.

Liebling [3] in 1926 added a case in which the platelet counts were as low as 20,000, were not associated with splenomegaly, and both the mother and the infant recovered after delivery; the infant as well as the mother was affected. Mosher [1] stated that the offspring was not usually affected but was in the case he reported.

That congenital thrombocytopenic purpura hemorrhagica does occur and that it may be responsible for the infant's death in utero or within two weeks after

1. Mosher, G. C.: The Complication of Purpura with Gestation, Surg., Gynec. & Obst. **36**: 502 (April) 1923.
2. Rushmore, S.: Purpura as a Complication of Pregnancy, Am. J. Obst. & Gynec. **10**: 553 (Oct.) 1925.
3. Liebling, P.: Purpura in Pregnancy, Am. J. Obst. & Gynec. **11**: 847 (March) 1926.

delivery is attested by Sanford, Leslie and Crane,[4] who reported a case in which the mother and infant also recovered after delivery. Siegler[5] added 12 cases to those of Rushmore,[2] making a total of 59 cases collected between 1867 and 1931, and added a case of his own in which the mother recovered but the infant died on the fourth day after delivery, "probably of purpura hemorrhagica," this diagnosis being based on the fact that blood was found in the spinal fluid. Necropsy of the infant was not performed.

TABLE 1.—*Blood Counts*

Observation*	Date	Platelets	R. B. C., Millions	Hemoglobin †		Comment
			W. B. C.			
1	9/19/40	.....	13,700	2.870	50%	
2	9/21/40	130,000				
3	9/28/40	.....	24,550	3.690	60%	
4	9/ 3/43	97,000	.....	2.720	10.5	
5	9/23/43	110,000	8,050	2.380	10.5	Before 3 transfusions
6	9/28/43	60,000	7,200	4.090	61%	See table 2
7	10/19/43	89,300	10,900	3.190	12.0	
8	10/23/43	114,000	8,400	3.020	9.5	Before 3 transfusions
9	10/27/43	Splenectomy. Spleen weighed 1,060 Gm.				
10	10/28/43	120,000	15,900	3.720	12.0	
11	10/29/43	150,000	15,250	4.220	13.5	
12	10/30/43	230,000	11,750	3.860	12.5	
13	11/ 1/43	240,000	12,350	3.750	12.5	
14	11/ 4/43	390,000	12,450	3.760	12.0	
15	11/ 8/43	580,000	12,150	3.580	11.5	
16	11/29/43	Delivered normally of a normal girl infant which weighed 5 lbs. 4½ oz. (2.63 Kg.)				
Mother's.....		510,000	16,000	3.810	11.5	Postpartum count
Infant's.....		420,000	16,800	5.290	17.0	

* Observations 1 to 3 made at Paterson General Hospital. Observations 4, 5 and 7 to 16 at the Barnert Hospital.

† Hemoglobin stated in milligrams per hundred cubic centimeters unless otherwise stated. Bleeding time varied on various occasions from 1½ minutes to 12 minutes. Coagulation time varied on various occasions from 5 minutes to 11 minutes. Clot retraction was reported on various occasions as being slight, no retraction after one hour, to good retraction after twenty-four hours. Tourniquet test was reported positive on the one occasion it was tried (see table 2).

Conti[6] in 1933 reported a very dramatic case, with complete necropsy findings in both mother and fetus, in which splenectomy was recommended but refused by the patient. The patient suffered from severe hematuria and epistaxis. Conservative measures such as hemostatic injections and transfusions were of no avail. Just prior to death the patient suffered from amaurosis, delirium, tonic and clonic convulsions and bradycardia (pulse 52). A lumbar puncture disclosed blood in the spinal fluid.

Splenectomy in the treatment of this complication of pregnancy is suggested by Williams.[7] Titus[8] devotes several paragraphs to this condition and states "I have seen only 1 case of typical purpura hemorrhagica early in pregnancy, but I am impressed by the suggestion that certain fulminating types of premature separation of the placenta seem to have a definite relationship to this rare disease." It is his opinion that interruption of pregnancy will not arrest the purpuric condition. It will merely open another avenue of bleeding.

Recent opinion among hematologists, as attested by their recommendations in the case herein reported, favors splenectomy when pregnancy is complicated by thrombocytopenic purpura hemorrhagica.

4. Sanford, H. N.; Leslie, E. I., and Crane, M. M.: Congenital Thrombocytopenia, Am. J. Dis. Child. **51:** 1114 (May) 1936.

5. Siegler, S. L.: Purpura Hemorrhagica Complicating Pregnancy, M. Rec. **139:** 189 (Feb. 21) 1934.

6. Conti, F.: Purpura in Pregnancy: Fatal Episode with Fetal Manifestations, Rassegna internaz. di clin. e terap. **14:** 450 (May 31) 1933.

7. Williams, J. W.: Obstetrics, ed. 6, New York, D. Appleton-Century Company, Inc., 1930, p. 611.

8. Titus, P.: The Management of Obstetric Difficulties, ed. 2, St. Louis, C. V. Mosby Company, 1940, pp. 202-203.

REPORT OF CASE

History.—A white secundigravida aged 29 complained on Aug. 31, 1943 of ecchymoses, epistaxis, hemoptysis and hematuria. The duration of these symptoms was five years, but they had become more severe in the past month. It was estimated that she was in her sixth month of gestation at this time and that she should deliver about December 7.

The patient had been married five years, and her first pregnancy was induced prematurely in the eighth month of gestation at another hospital. Reference to the chart at this hospital (the Paterson General Hospital) indicates that the patient delivered a normal infant on Sept. 27, 1940. She had received two blood transfusions, one before and one after delivery. The blood counts taken at this time are recorded in table 1. She was discharged October 8 with a final diagnosis of pregnancy (delivered), bilateral hydronephrosis, infection of the right kidney, secondary anemia, systolic murmur and purpura hemorrhagica. The patient was advised at this time to have a splenectomy performed and not to have any more children.

The father, aged 52, had a heart attack a few years before and was now in fair health. The mother, aged 54, had had two attacks of cerebral thrombosis, which had affected her speech. Two aunts died of tuberculosis. One grandfather died of carcinoma of the stomach.

The patient suffered from a severe attack of measles, whooping cough, several attacks of tonsillitis and rheumatic fever in childhood. She had had no serious illnesses since then until five years before, when her present illness began with the appearance of ecchymoses and bleeding gums. Tonsillectomy was performed at the age of 14. At the age of 23 appendectomy was performed by Dr. Jesse H. York of Atlanta, Ga. Dr. York informed me that there was no evidence of thrombocytopenic purpura hemorrhagica at that time.

TABLE 2.—*Dr. Nathan Rosenthal's Report of Sept. 28, 1943*

Blood count	
Hemoglobin	61%
Red blood count	4,090,000
White blood count	7,200
Platelets	60,000
Myelocytes, neutrophils	2%
Polymorphonuclears, nonsegmented	24
Polymorphonuclears, segmented	40
Polymorphonuclear eosinophils	1
Lymphocytes	24
Plasma cells	2
Monocytes	7
Bleeding time	12 min.
Coagulation time	11 min.
Tourniquet test	Positive
Clot retraction	Slight
Bone marrow	
Nucleated cells	720,000
Megakaryocytes	3,200
Myeloblasts	3%
Promyelocytes, neutral	3%
Myelocytes, neutral	37%
Polymorphonuclears, nonsegmented	32%
Polymorphonuclears, segmented	6%
Hematogones	6%
Lymphocytes	2%
Plasma cells	1%
Erythroblasts	2%
Normoblasts	8%

"The bone marrow is markedly cellular, possibly a result of continued bleeding from time to time. The megalokaryocytes are increased and show very little tendency to maturation, typical of thrombocytopenic purpura."

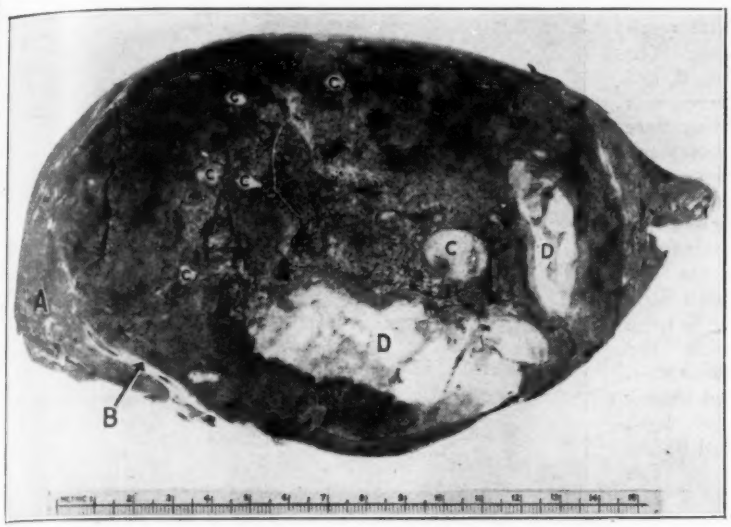
The patient is group A, Rh positive.

Physical Examination.—The weight was 123 pounds (61.2 Kg.), the blood pressure 130 mm. of mercury systolic, 80 diastolic, the pulse rate 96, the heart without murmurs, not enlarged, and regular in rate and rhythm. The urine was devoid of albumin and sugar. Table 1 gives the series of blood counts taken. The positive physical findings were gestation of five and a half months, splenomegaly and widespread ecchymoses.

A diagnosis of pregnancy complicated by thrombocytopenic purpura hemorrhagica was made at this time, and immediate splenectomy was recommended and refused.

On September 28 the patient was referred to Dr. Nathan Rosenthal of New York for a hematologic study and for recommendations as to treatment. Table 2 gives the blood and bone marrow findings. He recommended splenectomy and sterilization of the patient "as soon as possible."

At the patient's request, Dr. Rosenthal's and my reports were sent to Dr. York, who in turn consulted Dr. Roy R. Kracke, professor of pathology of Emory University. Dr. Kracke wrote Dr. York ". . . The problem is one of immediate management of this patient. . . . It is like trying to repair the leak in the roof while it is raining. . . . I think the best thing to do is to go ahead with splenectomy at once. . . . I don't advise sterilization in this case, since splenectomy should cure the disease."



Cross section of the spleen showing how the splenoma almost completely displaced the normal splenic tissue (*A*), the limiting connective tissue membrane of the splenoma (*B*), various grayish yellow nodules (*C*) and the large areas of necrosis within the splenoma itself (*D*). Only a comparatively small amount of normal splenic tissue was present at each pole.

On October 27 splenectomy was performed by me at the Barnert Hospital with the patient under a general ether anesthesia administered by Dr. H. M. Stein. The patient received 500 cc. of citrated whole blood on each of the three days prior to operation. She received 250 cc. of pooled human plasma during the operation and 500 cc. of citrated whole blood immediately after the operation.

The spleen weighed 1,060 Gm. Because it did not have the appearance usually associated with thrombocytopenic purpura hemorrhagica of the so-called idiopathic or essential type, I did not sterilize the patient.

The pathologic diagnosis (by Lieut. Jacob Churg, in collaboration with Dr. Paul Klemperer) was agnogenic myeloid metaplasia of the spleen; large "splenoma" with areas of necrosis.

On November 8 the patient was discharged, recovered, on the twelfth postoperative day.

On November 29 Dr. M. S. Joelson delivered the patient normally of a normal female infant which weighed 5 pounds 4½ ounces (2.63 Kg.). The mother was discharged one week later. The infant was taken home Dec. 22, 1943, after an epidemic of influenza in the household had subsided.

COMMENT

Splenectomy in pregnancy has been reported several times. Sutton [9] in 1901 reported the removal of a prolapsed spleen in the second month of pregnancy, which would have given rise to serious dystocia at the time of labor had it remained in situ. Serbin [10] in 1937 reported 3 cases of splenomegaly in pregnancy treated by splenectomy.

Splenoma is a rare pathologic entity in which the function of the organ is not usually disturbed. Pool and Stillman [11] cite Foà, who in 1920 described a splenoma the size of an orange. Sweet [12] in 1942 reported the occurrence of splenoma in a woman of 59 who had had no serious illnesses. She had been married thirty-eight years and had had thirteen children and four miscarriages. Eight of the children died in infancy. Her blood count, including the platelet count, was normal. Sweet collected 7 other cases from the literature. In all these the only symptoms were those due to splenamegaly. My own case, herein reported, is unique in that some areas of the splenoma were necrotic, the blood picture was that of essential thrombocytopenic purpura hemorrhagica and pregnancy was superimposed.

Thrombocytopenic purpura hemorrhagica is a very serious complication of pregnancy. Several authorities are of the opinion that, as soon as it is established that the condition is due to splenic dysfunction, splenectomy is the treatment of choice.

SUMMARY

A case of pregnancy complicated by thrombocytopenic purpura hemorrhagica was successfully treated by splenectomy in the eighth month of gestation. A large splenoma, with areas of necrosis, was found.

The patient was delivered normally of a normal infant about two weeks prior to estimated term.

555 East 27th Street, Paterson 4.

9. Sutton, J. B.: The Surgery of Pregnancy and Labour Complicated with Tumors, Lancet **1**: 382, 452 and 529, 1901.
10. Serbin, W. B.: Splenomegaly in Pregnancy, Am. J. Obst. & Gynec. **34**: 486 (Sept.) 1937.
11. Pool, E. H., and Stillman, R. G.: Surgery of the Spleen, New York, D. Appleton and Company, 1923, p. 272.
12. Sweet, R. H.: Hamartoma of the Spleen: Report of a Case, New England J. Med. **226**: 757 (May 7) 1942.

Clinical Notes, Suggestions and New Instruments

RETROPERITONEAL CAVERNOUS HEMANGIOMA

MAX MILLMAN, M.D., SPRINGFIELD, MASS.

Retroperitoneal hemangiomas large enough to have any clinical significance are so rare that practically no mention of the condition is made in standard textbooks on pathology. However, Stout [1] in his volume on human cancer cites 2 instances, 1 a case of retroperitoneal hemangioma which was mistaken for a kidney, as reported by Harris, and the other a recurring lipoma which had areas of cavernous hemangiomas in it as described by Hilse. Of the few additional cases found elsewhere in the literature almost all are of renal origin. The present case of retroperitoneal cavernous hemangioma is presented because of its large size, its extrarenal origin and its rather unusual clinical picture and course.

REPORT OF CASE

I. K., a man aged 32, married, a hardware clerk, presented himself in September 1939 complaining of generalized abdominal pains of six months' duration. His family and past histories were noncontributory. He had always enjoyed excellent health until the onset of the present illness. The pain was dull, inconstant and fairly well generalized, although somewhat worse in the left side of the abdomen, especially when the patient was in the reclining position. It was not related to food intake

and was not relieved by alkalis or laxatives. There was no constipation or diarrhea. The appetite had remained good and there was no loss of weight. There were no symptoms referable to the cardiorespiratory or genitourinary systems.

The patient was well developed and well nourished. Abnormal findings were not present except for a large, smooth, nontender, fairly firm mass filling all of the right lower quadrant of the abdomen and extending into the right upper quadrant, where it gradually disappeared. It did not move with respiration and did not appear to be attached to the liver. The lateral border of the mass could be made out fairly well, and this was smooth in outline. The medial border, however, was less clearly defined. The blood and urine examinations were normal. The blood Hinton test was negative. X-ray examination of the chest did not reveal any abnormal findings. An intravenous pyelogram showed nothing abnormal in the kidneys or ureters. A barium sulfate enema (fig. 1) showed the cecum and ascending colon displaced obliquely as far as and even somewhat beyond the midline.

On Nov. 8, 1939 the patient was operated on, at which time a large pyramidal, hemorrhagic mass about the size of a large pineapple was found resting on the right iliopsoas muscle. The mass was soft, spongy and covered anteriorly by a thin capsule. It bled freely, and by the time it was removed it had shrunk in size considerably as the result of extravasation of blood. It was adherent quite firmly to the fatty retroperitoneal tissues as well as to the inferior part of the iliopsoas muscle. The ureter, kidney and adrenal gland were free.

The patient made an uneventful recovery from the operation. Following his discharge from the hospital he was given a series of high voltage roentgen treatments. He has since remained in excellent health. A second barium enema done

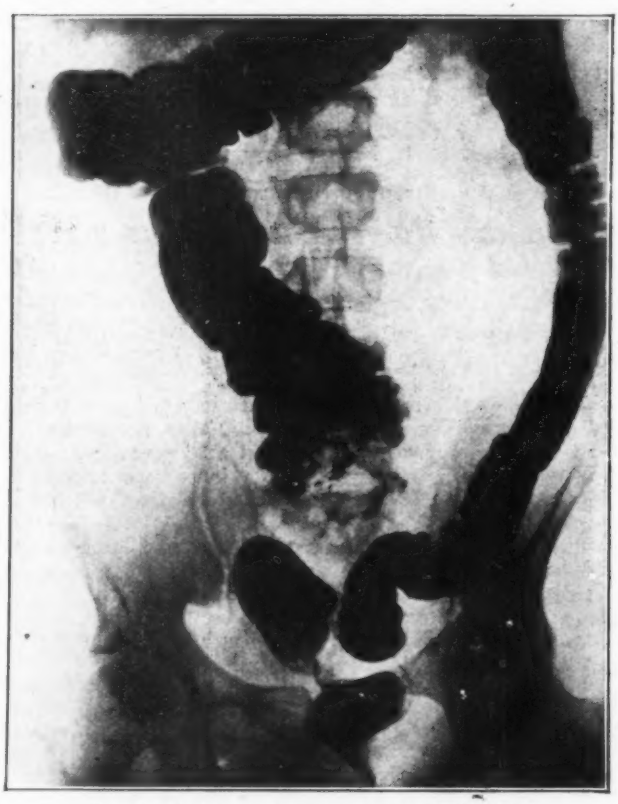


Fig. 1.—Displacement of cecum and ascending colon.

six weeks after operation showed the cecum and ascending colon to be in the normal position (fig. 2).

Microscopic examination of the tumor revealed the characteristic pattern of cavernous hemangioma. Here and there, and especially at the periphery, small amounts of fatty tissue were to be seen. The normal lobulation of fat, however, was absent.

COMMENT

The presence of fatty tissue in this tumor raises the question as to its exact origin. In Hilse's case, because of its recurrent nature, it was known that it originated as a lipoma, which later developed into a hemangioma. In our case, however, such proof is lacking. In some of the so-called cavernous

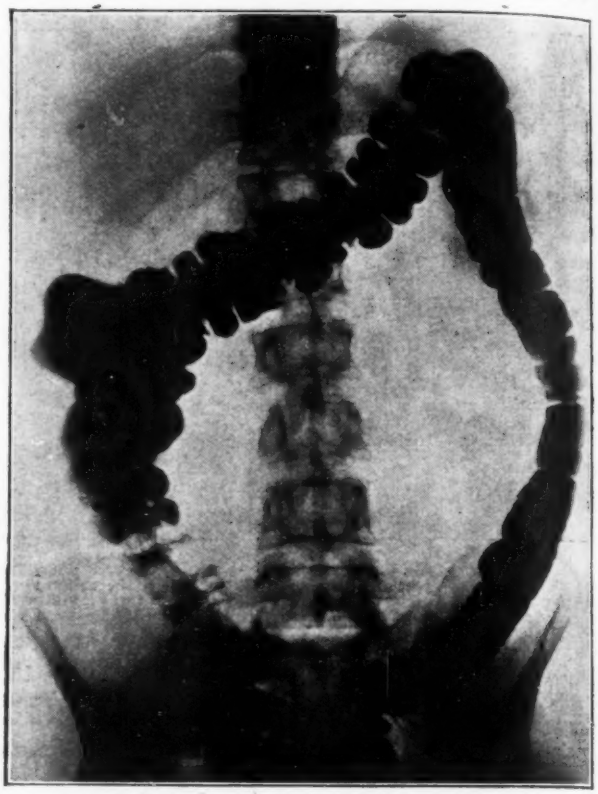


Fig. 2.—Normal position of cecum and ascending colon.

lipomas the extensive overgrowth of blood vessels may at times make it difficult to distinguish between vascular lipoma and hemangioma. However, the amount of fat in this case was too small to warrant a diagnosis of cavernous lipoma. The course of roentgen treatments was given for the purpose of preventing a possible recurrence.

14 Maple Street.

ZINC PEROXIDE—A NEW DRUG FOR RAPIDLY CURING THE SWOLLEN PREPUCE

GORDON G. ALLISON, M.D., ATLANTA, GA.

Zinc peroxide (ZnO_2) is a light, white, slightly irritative, pungent, astringent, bacteriostatic powder. Unstable in water suspensions, it readily loses part of its oxygen. This zinc compound has been employed in the City Venereal Disease Clinic in over 400 cases.

Zinc peroxide was used particularly in treatment of those venereal diseases producing ulcerative lesions of the male genitals, namely syphilis, chancroid, granuloma inguinale and fusospirochetosis. The multiple and simultaneous occurrence of several of these gives rise to a swollen, nonreducible foreskin. Usually the fusospirochetes enter the picture or invade the soil and enhance the damage to the conclusion of gangrene. Those physicians in the South who deal with the Negro draftees and enlistees are all cognizant of the large number of such cases, of the urgency of prompt treatment and rapid response, of the need of prompt diagnosis and of the usual slow response or failure of ordinary measures. The use of zinc peroxide shortens the disability period, lessens pain, permits an earlier diagnosis and lowers the cost of medical care.

Inquiry into the conditions necessary for the development of a swollen edematous prepuce reveals that primarily there must be a congenital redundance to which, secondly, is added

a narrowed tip or lumen, hardened, scarred or fibrosed by former trauma or a chronic balanitis. The third factor of an active venereal infection is one far from simple; all six venereal diseases may be contributory in the pathology. Gonorrhea, syphilis, chancroid, lymphopathia, granuloma inguinale and fusospirochetosis have been found responsible; rarely one, most commonly two or three and less frequently four, five

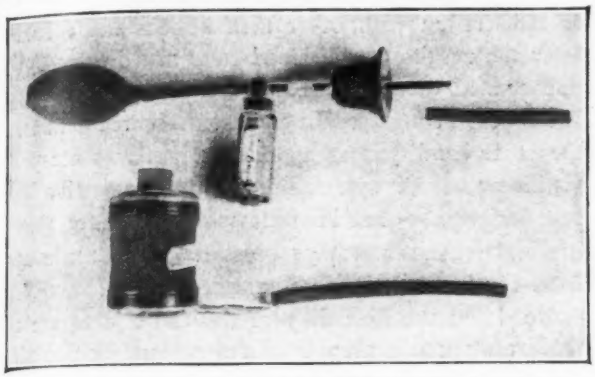


Fig. 1.—Apparatus for administering zinc peroxide.

or six are present under the same foreskin. Also various pyogenic organisms, the trichomonads and many nonpathogenic bacteria are ofttimes added to the infection.

Although the desire to reduce the swelling is paramount, one must also make a diagnosis of the venereal entity. Smears for gonorrhea, chancroid and fusospirochetosis are made at the first visit. Kahn, Frei and Ducrey tests are likewise performed. Usually the genital ulcer is visualized. The margin observed is cleaned and scraped, and a dark field examination of the serum is made. If the lesion cannot be seen, the dark field examination is postponed until swelling disappears and the foreskin can be retracted. By way of comment, it may be said that the dark field examination is frequently of no value because (1) the patient has treated himself with various drugs, and (2) if a chancre is present it is usually rather old and the spirochetes cannot be demonstrated; hence a Kahn test is usually positive at this time.

When four or five of the venereal diseases have been diagnosed in this way, treatment is begun; and after the prepuce can be retracted a small specimen for biopsy is obtained and

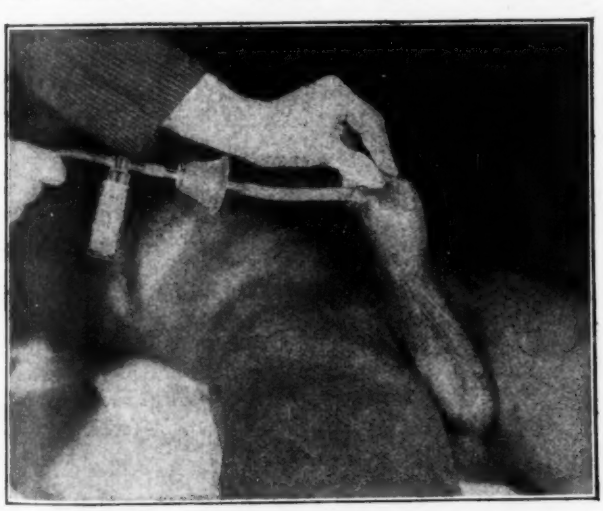


Fig. 2.—Method of introducing zinc peroxide.

the Donovan bodies searched for in this tissue. A second dark field examination is then made.

The method of treatment is simple. A piece of rubber tubing is attached to a powder blower or insufflator. Zinc peroxide powder is placed in the glass receptacle. The open end of the rubber tube is placed in the opening of the foreskin, and the skin is firmly held against the rubber tube. By vigorous compression of the bulb, the powder is forcefully blown about the glans penis and under the foreskin. The secretions moisten the powder and retain it under the prepuce. The patient is instructed not to wash or irrigate himself but to return in two or three days for another treatment.

The results of this method have been most satisfactory. The secretions are immediately lessened, the edema subsides, the induration and swelling disappear, the mucosa and skin become pliant and ofttimes on the next visit the foreskin can be retracted and the underlying pathologic conditions brought into view. The hazard of gangrene and of the loss of the outer third of the penis is dissipated, the need for dorsal slits is eliminated, and, lastly, it is possible to arrive at a complete diagnosis of all the venereal diseases present.

SUMMARY

A method of employing zinc peroxide to relieve a swollen prepuce caused by one or more venereal diseases has been devised. The efficacy of this method has been proved in over 400 cases. Its value is pertinent in these war days to all dealing with enlisted men, draftees and defense workers, particularly those of Negro blood.

301 Grant Building.

Council on Foods and Nutrition

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS AND NUTRITION OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

GEORGE K. ANDERSON, M.D., Secretary.

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

Beech-Nut Packing Company, Inc., Canajoharie, N. Y.

BEECH-NUT BRAND STRAINED VEGETABLES AND LAMB WITH RICE.

Analysis (submitted by manufacturer).—Total solids 14.29%, moisture (by difference) 85.7%, ash 1.29%, fat (ether extract) 1.05%, protein (N × 6.25) 2.25%, carbohydrates other than crude fiber (by difference) 9.18%, crude fiber 0.52%, calcium (as Ca) 0.04%, phosphorus (as P) 0.043%, iron total 5.5 parts per million, iron total available 4.8 parts per million, copper 4.1 parts per million.

Calories.—0.55 per gram; 15.59 per ounce.

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S CHOPPED VEGETABLES WITH BACON, RICE, AND SOYBEAN FLOUR, a canned chopped mixture of bacon broth, tomatoes, carrots, potatoes, peas, bacon, celery, rice, soybean flour, onions and salt.

Analysis (submitted by manufacturer).—Moisture 90.3%, total solids 9.7%, ash 1.1%, crude fiber 0.3%, fat (ether extract) 0.3%, carbohydrates (by difference) 5.4%, protein (N × 6.25) 2.6%, calcium (Ca) 16.2 mg. per hundred grams, phosphorus (P) 14.7 mg. per hundred grams, iron (Fe) 4.6 mg. per hundred grams, copper (Cu) 0.13 mg. per hundred grams.

Vitamins.—Thiamine, 0.057 mg. per hundred grams; riboflavin, 0.052 mg. per hundred grams; carotene, 2,500 U. S. P. units per hundred grams.

Calories.—0.4 per gram; 9.9 per ounce.

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S STRAINED CHICKEN SOUP WITH VEGETABLES AND NOODLES, a canned strained mixture of chicken broth, potatoes, dressed chicken, carrots, noodles, celery, salt and parsley.

Analysis (submitted by manufacturer).—Moisture 87.8%, total solids 12.2%, ash 1.2%, fat (ether extract) 0.6%, protein (N × 6.25) 2.4%, crude fiber 0.2%, carbohydrates (by difference) 7.8%, calcium (Ca) 21.5 mg. per hundred grams, phosphorus (P) 20.4 mg. per hundred grams, iron (Fe) 4.8 mg. per hundred grams, copper (Cu) 0.08 mg. per hundred grams.

Vitamins.—Thiamine, 0.026 mg. per hundred grams; riboflavin, 0.047 mg. per hundred grams.

Calories.—0.5 per gram; 13 per ounce.

Harold H. Clapp, Inc., Rochester, N. Y.

CLAPP'S STRAINED MIXED VEGETABLES WITH BARLEY AND SOY FLOUR, a canned strained mixture of lima beans, potatoes, peas, green beans, barley, soy flour and celery salt.

Analysis (submitted by manufacturer).—Moisture 84.7%, total solids 15.3%, protein (N × 6.25) 3.4%, ash 1.2%, crude fiber 0.4%, fat (ether extract) 0.1%, carbohydrates (by difference) 10.2%, calcium (Ca) 19.8 mg. per hundred grams, phosphorus (P) 12.0 mg. per hundred grams, iron (Fe) 4.6 mg. per hundred grams, copper (Cu) 0.4 mg. per hundred grams.

Vitamins.—Thiamine, 0.056 mg. per hundred grams; riboflavin, 0.218 mg. per hundred grams; carotene, 100 U. S. P. units per hundred grams.

Calories.—0.6 per gram; 15.7 per ounce.

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SATURDAY, MARCH 18, 1944

BLOOD GROUPING EVIDENCE

In courts of law any child born in lawful wedlock is presumed to be legitimate, and from the earliest days this presumption of legitimacy has been an extremely weighty one. Under the law of the "four seas" an English court once held that a child born in England was legitimate even though it appeared from the fullest evidence that the husband resided in Ireland during the whole term of his wife's pregnancy and for a long time previously, because Ireland was within the king's domain.[1] In 1907 this grotesque rule was modified, but the presumption of legitimacy has remained a formidable obstacle to scientific progress, as may be gleaned from a recent decision handed down by an English court.[2]

In a divorce proceeding the husband requested a blood test, which proved that he was not the father of his wife's child. (Both husband and wife belonged to type M, while the child belonged to type MN.) The test is now generally accepted as proof that a certain man could not have been the father of a certain child. In his decision the judge remarked that at first he was inclined to think, *albeit very reluctantly* (italics ours), he was bound in law to accept the result of the blood group test, not because as a man he thought the doctor was right but because as a magistrate he thought the evidence was legally convincing. However, since the legal presumption of a child born in wedlock being legitimate is very strong, he finally decided not to upset it solely on scientific evidence. Evidently this judge preferred the comfort of adherence to tradition.

The reaction of American courts to blood test evidence has been reviewed in a book that has just appeared.[3] The problem of paternity arises most frequently in so-called filiation proceedings, less often in divorce actions. In the former the child is born out of wedlock and the mother designates a certain man as father and an action is started to compel him to support the child. In such cases, when the blood tests prove that the defendant is not the father of the child in question, the courts usually accept this result without hesitation, probably because an illegitimate child is involved. (It is highly significant, that the woman usually confesses to indiscretion with other men besides the defendant after the results of the blood tests are divulged.) In uncontested divorce actions the reaction of the court is likewise favorable. In contested divorce actions, on the other hand, judges apparently prefer to accept the testimony of the wife rather than the objective blood test findings, so that in courts of this country, just as in England, not much progress has been made away from the law of the "four seas."

No doubt the first duty of the court is to see that truth and justice prevail. In the English case cited, the court proudly announced the happy outcome—the husband agreed to make a home for wife and child and accept the child as his own. However, a reconciliation might have been effected without resorting to such subterfuge, because husbands in the past have been known to forgive erring wives and to accept children not their own. When a court refuses to dissolve or annul a marriage of two completely incompatible people, even though there is scientific proof of the wife's deceit or fraud, as has happened in a number of cases in American courts, the court would not appear to be carrying out its responsibilities as an administrator of justice.

1. Cited after Swetlow, G.: Blood Grouping—Its Legal Applications, M. Times & Long Island M. J., July 1932.
2. Assessment of Blood Group Evidence, Brit. M. J. **1**:134 (Jan. 22) 1944.
3. Schatkin, S. B.: Disputed Paternity Proceedings, Albany, N. Y., M. Bender & Co., 1944.

ANDREAS VESALIUS AND HARVEY CUSHING: TRADITION AND INSPIRATION

Just as skill in perspective drawing is necessary for proficiency in painting and sculpture, a mastership in anatomy opens the door to all purposeful work in medicine. The period of Galen, emphasizing rational anatomy and physiology as a corrective to even the brightest hippocratic philosophies of form and function, significantly runs synchronously with the highest development in Greek art. Galen's inductive school dominated practically all natural and medical science until the advent of the Renaissance, when medicine, till then a unit, burst into the cluster of component disciplines natural history, physiology, geology, chemistry, physics, astronomy and mechanics. When Vesalius in the sixteenth century instituted the teaching of anatomy by dissections of the human body, the laboratory method recorded its first victory over the didactic. No wonder, then, that the name of Andreas Vesalius took a high place in medical consciousness.

In those early days the study of nature flourished under the wing of medicine. As a reminiscence of that fostering care, the study of the medical sciences now leans on a competent insight into all nature and a knowledge of the methods and results of the former

auxiliary disciplines. For that reason all medical men may be said to enter medicine by an introduction into the natural sciences now known as biology. Many of the greatest medical men have been historically minded. American activity in the history of medicine compares well with similar scholarship elsewhere. An enthusiastic group of physicians have supported it with both international and local studies, receiving loyal aid from capable bibliographers and collectors of medical literature. Nor should those publishers be forgotten who, time and again, took risks in order to stand by the traditions which history and biography try to maintain.

Many will remember the time when medical-biologic libraries of adequate size were scarce enough even in important medical centers in the United States. The progress of our library movement has been effective. Two classes of books are permanently valuable for medical research: periodicals and the classics in all general, special and contingent fields. Library service grew as the books accumulated; local service and countrywide cooperation now are demanded, observed and explored. The spread of bibliographic assistance is an example to all the world. From the Surgeon General's *Index Catalogue* through the *Index Medicus* to the *Quarterly Cumulative Index Medicus*, bibliography has proceeded in a purposeful organization of collective efforts toward the support of medical scholarship.

John Shaw Billings conceived the anatomic analysis of the Surgeon General's Library which now is being continued by the library staff of the American Medical Association. Osler, Welch, Garrison, Crummer, Pilcher, Frank and Cushing, as well as their still surviving spiritual descendants, carried this analysis into the field of critical history by analyzing the contents and significance of known and newly discovered classics. Harvey Cushing pursued bibliologic studies in his scant hours of respite between operations. His latest effort in the field of historical medicine was his work A Bio-Bibliography of Andreas Vesalius (New York, Schuman's, 1943). At the age of 29 Vesalius published (1543) his monumental work on human anatomy, with its unexcelled engravings, renowned artistically no less than scientifically, and accompanied by elaborate descriptions, which soon became familiar to every student in every medical group in Europe. The illustrations were copied, reprinted and appropriated by numerous contemporary and later writers. This tradition Dr. Cushing, during forty years of a busy life, traced in full detail, collecting, comparing and defining the influence of Vesalius through the ages. The findings of many other bibliographers were verified and ventilated. As a result the restless life of Vesalius unfolds before us. The reader learns about his book on the China root, his *consilia* (written consultations), his discussions of the findings of Fallopius, his emendations to Galen, his epistle on venesection, some of these papers being side lights to his major work.

All this constitutes the life of a medical scholar of transcendent influence. This indeed is history. Vesalius is not the only person to whose abilities this book testifies; Harvey Cushing persisted in this work until the pen dropped from his capable hands.

IS ASPIRIN A DANGEROUS DRUG?

Aspirin, or acetylsalicylic acid, has been used in enormous quantities throughout most of the world for some forty-five years. Many persons seem to have a mild idiosyncrasy to this drug or to the other salicylates and consequently avoid its use; the vast majority take it with apparent impunity. Although toxic effects have been discussed in these columns,[1] severe reactions are certainly rare in relation to the enormous quantities consumed. Deaths from aspirin have been reported; these appear to have been more frequent in England than in this country.

New evidence indicates that aspirin and the other salicylates produce a physiologic effect which cannot be ignored. About 1941, Huebner and Link [2] of the Wisconsin Agricultural Experimental Station discovered that dicumarol when given by mouth induces a shortage of prothrombin in the blood. They found also that dicumarol could be qualitatively degraded to salicylic acid. Later, Link and his co-workers [3] tested the action of salicylic acid itself. When single doses of salicylic acid were given to rats kept on an artificial diet which was low in vitamin K, a decrease of the prothrombin in the blood occurred. Also if the salicylic acid was given over a long period, hemorrhages resulted; if vitamin K was administered the hypoprothrombinemia did not develop. More recently other investigators [4] found that salicylic acid would act in the same way on human beings and that when vitamin K was administered simultaneously with the salicylic acid the fall in prothrombin levels was prevented. The administration of vitamin K after the production of hemorrhage by dicumarol or salicylic acid, however, is of little use.

These observations offer a plausible explanation of such events as the report of a British physician [5] in 1943 concerning the development of nosebleed in 3 cases after taking large doses of aspirin or the frequent occurrence of bleeding in patients with rheumatic fever who are receiving large doses of salicylates. Such

1. Acetylsalicylic Acid Deaths, editorial, J. A. M. A. **115:** 1199 (Oct. 5) 1940.

2. Huebner, C. F., and Link, K. P.: Studies on the Hemorrhagic Sweet Clover Disease, J. Biol. Chem. **138:** 529 (April) 1941.

3. Link, K. P.; Overman, R. S.; Sullivan, W. R.; Huebner, C. F., and Scheel, L. D.: Studies on the Hemorrhagic Sweet Clover Disease, J. Biol. Chem. **147:** 463 (Feb.) 1943.

4. Meyer, O. O., and Howard, Beryl: Production of Hypoprothrombinemia and Hypocoagulability of the Blood with Salicylates, Proc. Soc. Exper. Biol. & Med. **53:** 234 (June) 1943. Shapiro, Shepard; Redish, M. H., and Campbell, H. A.: Studies on Prothrombin: IV. The Prothrombinopenic Effect of Salicylate in Man, Proc. Soc. Exper. Biol. & Med. **53:** 251 (June) 1943.

5. Honigsberger, M.: Brit. M. J. **2:** 57 (July 10) 1943.

observations suggest that patients who are required to take salicylates in large quantities for a long time should also receive prophylactic doses of vitamin K. When, however, hemorrhages occur after the taking of dicumarol or the salicylates, vitamin K is not likely to be effective; then proper treatment may include the giving of a blood transfusion.

The mass of evidence so far available indicates that aspirin and the salicylates are among the least toxic of active pharmacopeial preparations. This status, however, should not be interpreted as an excuse for failure to recognize hazards connected with their abuse or even under certain circumstances of established usage. Their ability to produce hemorrhage in some cases appears to be counteracted by early administration of vitamin K. It does not now seem necessary to administer vitamin K to all patients receiving salicylates; those who are to receive large doses for a long time may appropriately be given vitamin K.

Current Comment

PNEUMONIA IN THE SHIPBUILDING INDUSTRY

The United States Maritime Commission calls attention to the observations of Collen, Dybdahl and O'Brien that welders are no more prone to respiratory disease than other shipyard workers. In the twelve month period from September 1942 to September 1943 864 patients with pneumonia were treated at the Permanente Foundation Hospital, Oakland, Calif. The diagnosis of pneumonia was substantiated in every case by a positive roentgenogram of the chest. Questionable cases of "minimal" pneumonia, "pneumonitis" or similar indefinite diagnosis were not included in this series. Patients with pneumonia as a contributory diagnosis to another illness were excluded. A study of the epidemiology of pneumonia at the shipyards indicated that the annual frequency rate of pneumonia was 9.5 per thousand workers. Available data did not indicate that the rate of incidence or type distribution of pneumonia were different among shipyard workers than in the general population. Workers who had recently migrated to this area from other states were no more susceptible to pneumonia than those who have lived in this region for a long time. The incidence rate of pneumonia was found to be independent of the length of employment. There was no relationship between the incidence of pneumonia and occupation. Since pneumonia is commonly accepted as an index of both the seriousness and the general occurrence of severe respiratory illness, it is important to the steel fabrication industry in general and especially to the shipbuilding industry that these observations be known. Complete details are available from the Division of Shipyard Labor Relations, U. S. Maritime Commission, Washington, D. C.

MORE ELECTRICAL TRANSCRIPTIONS FOR RADIO PROGRAMS

On page 784 of this issue of THE JOURNAL is an announcement of electrically transcribed radio health broadcasts available through the Bureau of Health Education. This project was authorized by the Trustees for experimental development in 1942. Since that time three series of electrically transcribed programs have been made available and a fourth is in process of development. These electrical transcriptions are in the form of interviews with physicians of the headquarters staff of the American Medical Association, who are interviewed by women broadcasters. In view of the reduced membership of local medical societies owing to the war situation, the maintenance of radio broadcasting service in local communities has become impossible on a normal basis. The use of radio scripts furnished by the Bureau of Health Education for many years has dwindled sharply because of the lack of physicians in local communities to organize and maintain a broadcasting service. Electrically transcribed radio health broadcasts now available can be used in local communities with a minimum of time and effort by local physicians and county medical societies. In many instances all necessary arrangements can be made by the Woman's Auxiliary. No matter at what time of day the radio station makes time available, the transcription is always ready. Local medical societies, health departments, voluntary health agencies or any reputable local group may have these transcriptions, subject to approval by the local medical society, without cost except for the nominal expense of returning the records. Already these transcriptions have been lent more than fifty times and have served in more than twenty-five communities. Many of the sets of records that have been lent will be returned to the Bureau soon and will be available again for use.

PREVENTION OF VENOUS THROMBOSIS

The discovery that dicumarol reduces the prothrombin titer of circulating blood [1] stimulated the hope that this active principle of sweet clover toxin might be useful in the prevention or cure of venous thrombosis. This hope was strengthened by preliminary tests which showed that lethal doses of this toxin reduced the incidence of experimental thrombosis in dogs. Dale and Jaques [2] administered 10 mg. of dicumarol per kilogram intravenously to a number of dogs and sixty hours later crushed their radial and saphenous veins with linen thread. Two and one-half hours after removal of the ligatures 60 per cent of the injured veins were found free from thrombi, as contrasted with a 100 per cent involvement in their nonintoxicated controls. Richards and Cortell [3] gave 4 dogs lethal oral doses of dicumarol (25 mg. per kilogram) daily for three to five days and then attempted to produce thrombosis by injecting

1. Link, K. P., and others: J. Biol. Chem. **136**: 47, 1940; **138**: 1, 21, 513, 1941; **142**: 941, 1942.
2. Dale, D. N., and Jaques, L. B.: Canad. M. A. J. **46**: 546, 1942.
3. Richards, R. K., and Cortell, R.: Proc. Soc. Exper. Biol. & Med. **50**: 237, 1942.

monoethanolamine oleate into isolated loops of their radial and saphenous veins. Six to ten days later the veins were examined microscopically. Thrombi were absent in 10 of the 12 sclerosed veins of the dicumarol intoxicated dogs, while thrombi were found in 11 of 14 sclerosed veins in their nonintoxicated controls. Thill and his associates [4] of the University of Wisconsin, using the same sclerosing method, tested the prophylactic efficiency of a single safe therapeutic dose of dicumarol. Each of a series of 15 dogs was given 5 mg. of dicumarol per kilogram orally in a gelatin capsule, 15 untreated dogs being used as controls. Two days later the average prothrombin time was twenty minutes in the dicumarol treated dogs as contrasted with six minutes prothrombin time in their untreated controls. Monoethanolamine oleate (0.25 cc.) was then injected into a 3 inch isolated segment of each radial vein of the 30 dogs. Three minutes later the finger compressions above and below the isolated segments were removed and the sclerosing agent permitted to enter the general circulation. Six to nine days later the segments were studied microscopically. In the 15 untreated controls 17 (56.6 per cent) of the 30 sclerosed veins showed thrombi. Only 6 (20 per cent) of the 30 sclerosed veins showed thrombosis in the 15 dicumarol treated dogs. The incidence of experimental thrombosis was therefore reduced over one half as a result of a single therapeutic dose of dicumarol. This dose is equivalent to the amount that can be safely administered to man. Neither postoperative hemorrhage nor other deleterious effects were noted as a result of administration of dicumarol in this dosage.

4. Thill, C. J.; Stafford, W. T.; Spooner, M., and Meyer, O. O.: Proc. Soc. Exper. Biol. & Med. **54**: 333 (Dec.) 1943.

DIAGNOSIS OF SUBDURAL HEMATOMA IN CHILDREN

The need for early diagnosis and prompt treatment of subdural hematoma in children cannot be overemphasized. By restricting the rapid expansion of the brain which occurs at this age period and by interfering with the blood supply and cerebrospinal fluid circulation, subdural hematoma impairs the development of cortical functions and leads to degenerative and atrophic changes of the brain. Cortical atrophy, optic atrophy, extensive paralyses and mental deterioration are some of the irreversible complications resulting from uncontrolled subdural hematoma. Yet the condition is often unrecognized. Of 98 cases studied by Ingraham and Matson,[1] only about one third were hospitalized with the correct primary diagnosis. The usual belief that this lesion seldom occurs, in addition to the lack of a characteristic clinical picture, is largely responsible. In this connection Ingraham and Matson point out that the frequency with which subdural hematoma is found is largely proportional to the intensity with which it is sought. In the presence of any indication of subdural hemorrhage, puncture of the subdural space, they recommend, should be performed to establish a definite diagnosis. This implies, of necessity, that the lesion must be suspected and sought for, as there is no other indication for subdural puncture. In 98 cases of subdural hematoma in children, the most constant features were generalized symptoms such as irregular fluctuations of temperature, failure to gain in weight, vomiting and irritability. Signs referred to the central nervous system, including hyperactive reflexes, paralysis, convulsions and coma, were sometimes present. More specific signs of intracranial hypertension, such as progressive enlargement of the head, separation of the cranial sutures and abnormalities of the eyeground were significant indications for doing subdural puncture. However, the clinical picture was frequently misleading, being that of an infant appearing acutely or chronically ill, with an elevated or subnormal temperature and malnutrition. A history of trauma to the head should then be carefully investigated, as it was present in over half of the patients. The fact that only 11 had skull fracture indicates that mild trauma might well account for many cases of subdural hematoma in children. In all cases, definite diagnosis was possible by the results of subdural puncture, which, performed with aseptic care, is a simple and safe procedure.

1. Ingraham, F. D., and Matson, D. D.: Subdural Hematoma in Infancy, J. Pediat. **24**: 1 (Jan.) 1944.

EARLY RECORD OF VITAMIN C DEFICIENCY

Perhaps the earliest recorded example of vitamin C deficiency was that described in himself by Luigi Cornaro in 1558. According to Marcovitch,[1] Cornaro restricted his diet to bread, the yolk of egg and a little meat, together with 14 ounces of wine. During July and August of each year he suffered from anorexia, but as soon as new wine became available his symptoms improved. In the light of modern knowledge this may be interpreted as evidence of vitamin C deficiency, since it is now known that wine, never overplentifully supplied with this vitamin, contains none at all after it becomes a year old. During periods of vitamin C deficiency, Cornaro frequently ate only the yolk of an egg; since carbohydrates create a demand for vitamin C that is not made by proteins or fats, he thus showed himself to be a keen observer and an astute selector of suitable food.

1. Marcovitch, S.: An Early Record of Vitamin C Deficiency, Bull. History Med. **14**: 395 (Oct.) 1943.

EXPECTATION OF LIFE

The League of Nations Monthly Bulletin for December presents tabular data on the expectation of life at birth and at 1 year of age in over thirty countries. For all countries covered the expectation of life at birth and in the earlier years of life is greater than in previous periods; the improvement is less striking or absent in later stages of life. The United States ranks high in the list and is exceeded only slightly by the Netherlands, New Zealand, Australia and Sweden. Japan, Russia and India have the lowest expectation of life, according to the latest information available. In all countries females show a greater expectation of life than males.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeons General of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

ARMY

COORDINATION OF PHYSICAL AND SURGICAL THERAPY IN ORTHOPEDIC AND AMPUTATION CASES

The War Department states in the Technical Bulletin of Medicine No. 10, dated February 14, that in order that the care of orthopedic and amputation cases may be of the highest order, treatment by responsible medical officers and physical therapists must be more closely coordinated. Such coordination can be effected by the attendance of physical therapists at ward rounds and at clinical orthopedic conferences at which the diagnosis, clinical history and proposed therapy in each case are discussed by the ward officers and section chiefs.

An active program of muscle development and rehabilitation during convalescence is essential. More careful attention during the early postoperative period should be given to special exercises of the muscles of the abdominal wall, extremities and back. By their use all patients requiring prolonged periods in bed, including those in casts, can prevent the development of muscle weakness and atrophy.

The importance of quadriceps muscle treatment is too frequently disregarded. This has been responsible for poor postoperative results, especially in cases of internal derangement of the knee joint. Preoperative instruction of the patient in regard to exercises to be carried out following surgery should be given. The prescribed exercises should be begun as early as forty-eight hours after surgical operation and should be graduated to include, successively, static contraction, straight leg raising, active motion and resistive exercises. Full weight bearing must not be permitted until the strength of the quadriceps is adequate. Grouping of patients with allied conditions will facilitate instruction and promote interest and a spirit of competition in the proper performance of the prescribed exercises.

Massage should be employed only in those cases in which it is definitely indicated and should never be carelessly or hurriedly administered. Such therapy is a valuable supplement to active exercises but not a substitute for them.

In the case of peripheral nerve injuries particular attention should be given to muscle testing and tests for sensory changes. The progress of these cases can be followed only when this information is well known to both the medical officer and the physical therapist.

In regard to the treatment of anterior poliomyelitis, the principles of support, splinting and therapeutic exercise have been presented in SGO, Circular Letter No. 175, dated Oct. 20, 1943, and published in THE JOURNAL, Nov. 27, 1943, page 841.

MILLION SOLDIERS MADE DENTALLY FIT BY ARMY DENTAL CORPS

Approximately 1,000,000 men have been rendered dentally fit by the Army Dental Corps for general military service since the start of the war, according to a recent release from the War Department. Accepted into the Army under lowered dental requirements, these men were treated by the Army Dental Corps to correct defects, cure dental diseases and provide dentures. Dental requirements were lowered in October 1942, since which time about one man in a thousand has failed to meet maximum dental requirements. Since Pearl Harbor, more than 1,075,000 new dentures have been furnished and Army personnel have had more than 31,142,000 teeth filled. More than 56,000 bridges, 220,000 denture repairs and 323,500 prophylactic and pyorrhea treatments have been provided. During the latter months of 1943, 30 per cent more teeth were replaced by dentures and bridges than were extracted by the Dental Corps. It is estimated on the basis of past experience that there will be a minimum of 60 extractions for each hundred men inducted, and about 15 new dentures. The average man will require five or six fillings, in addition to various other dental services. About 3.5 per cent of newly inducted personnel wear one or more dentures.

SLEEPING BAG FOR EVACUATION OF WOUNDED

A new type of sleeping bag has been designed and developed by the Quartermaster Corps for evacuation of wounded under conditions of extreme cold, the War Department recently announced. The new sleeping bag will be used by Army Air Forces for air evacuation at high altitudes, and by Army Ground Forces in ambulances operating in arctic and subarctic areas. It consists of two mattresses held together by a 20 foot long slide fastener with ten separate sliders. The outside of the bag is of water repellent duck and the inside is of cotton balloon cloth. It weighs about 24 pounds, is quilted and is stuffed with feathers, and has six carrying loops. The bag may be opened out flat for cleaning and airing by bringing all ten sliders together on one side. When occupied and closed, use of any of the ten sliders permits easy access to any part of the wounded man without entirely exposing him. Another 32 inch fastener with three sliders permits opening the bag down the front, including an arrangement for a face opening. A face opening also may be made at one side for patients who must be transported lying on one side.

NEW FRONT LINE SURGICAL TRUCK

A new type of surgical operating truck, the idea of Major Gen. Norman T. Kirk, Surgeon General, U. S. Army, which enables several army surgical teams at the front lines to work at the same time with the result that from 80 to 100 men can be operated on during a full twenty-four hours, was announced by the War Department February 23. Numerous units have already been manufactured and sent overseas. The truck is six wheeled and has a 2½ ton capacity. The teams work in tents attached like two rooms to the rear of the truck. The tent rooms are double walled and lined in white duck to give light. Screened windows give added illumination. The inside of the truck is used for the storage of supplies, instrument cabinets and scrub sinks. In the old type surgical mobile unit, still in use where it meets the need satisfactorily, only one team can work at a time. Operations are performed in the truck. A tent attachable to it can be used only for receiving and delivering patients.

BANDAGING AND SPLINTING

The War Department has issued a field manual numbered FM 8-50 on bandaging and splinting. It offers a complete discussion of basic materials, the use of triangular and cravat bandages, roller bandages, dressings and splints, also instructions regarding the Balkan frame. The manual is planned primarily as a guide to medical officers and noncommissioned officers concerned with instructing medical department personnel. Copies may be obtained from the Government Printing Office.

ARMY AIR FORCE SURGEONS

A meeting of surgeons from all U. S. Army Air Forces Commands and Air Forces within the continental limits of the United States was held from January 20 to 23 in the office of the Air Surgeon, Washington, D. C. In the accompanying illustration, reading from left to right, are shown the following officers:

Front row: Col. E. F. Harrison, surgeon, AAF Central Flying Training Command, Randolph Field, Texas; Brig. Gen. Eugen G. Reinartz, commandant, AAF School of Aviation Medicine, Randolph Field, Texas; Major Gen. D. N. W. Grant, the Air Surgeon; Brig. Gen. Charles R. Glenn, surgeon, AAF Training Command, Fort Worth, Texas; Col. Cadmus J. Baker, surgeon, First Air Force, Mitchel Field, N. Y.; Col. Fabian L. Pratt, surgeon, Fourth Air Force, San Francisco.

HONOR STUDENTS IN ARMY SPECIALIZED TRAINING PROGRAM AT WAYNE UNIVERSITY

Forty-five honor students in the Army Specialized Training Program, comprising the upper fifth of their class scholastically, received certificates of merit at a military review held recently at Wayne University. At the ceremony, Lieut. Col. Chester A. Marr, commanding officer of the Detroit technical training area, and Capt. Walter A. Cook, Capt. Keith Murdock and Lieut. Philip E. Goslee, all ASTP officers, represented the army. The university was represented by Dr. David D. Henry, executive vice president; Dr. William W. Whitehouse, dean of the College of Liberal Arts; Victor F. Spatheld, counselor in men's activities; Don Palmer, counselor of placement, and Howard Hess, assistant professor of electrical engineering.

Surgeons of Army Air Forces at meeting in Washington.

Second row: Col. Harold H. Twitchell, surgeon, Second Air Force, Colorado Springs, Colo.; Col. John M. Hargreaves, surgeon, Air Service Command, Patterson Field, Ohio; Col. Michael G. Healy, surgeon, AAF Western Flying Training Command, Santa Ana, Calif.; Col. Wilford F. Hall, surgeon, AAF Western Technical Training Command, Denver; Col. Paul C. Gilliland, Air Transport Command, Washington, D. C.

Third row: Col. Kenneth G. Gould, surgeon, Third Air Force, Tampa, Fla.; Col. Nuel Pazdral, surgeon, AAF Eastern Flying Training Command, Maxwell Field, Ala.; Col. Dan C. Ogle, surgeon, AAF Regional Station Hospital No. 1, Coral Gables, Fla.; Col. Ralph T. Stevenson, commandant, AAF School of Air Evacuation, Bowman Field, Ky.; Col. William H. Powell Jr., officer in charge, Professional Services, Headquarters AAF Training Command, Fort Worth, Texas.

CAPT. SHELDON C. SOMMERS AWARDED SILVER STAR

Capt. Sheldon C. Sommers, formerly of Indianapolis, has been awarded the Silver Star for heroism in action in Italy. The citation accompanying the award read "Under heavy enemy shell fire, Captain Sommers left his position of safety to care for several men who were wounded by an enemy burst. During this period Captain Sommers was under heavy artillery fire. After the wounded were treated and evacuated, he found that several unseasoned troops were becoming panic stricken. He calmed them and got them to return to their positions. Captain Sommers' action reflects great credit on the medical service." Dr. Sommers graduated from Harvard Medical School in 1941, interned at the University of Chicago Clinics and entered the service July 30, 1942.

CAPT. RICHARD F. KUHN AWARDED MEDAL OF DISTINCTION BY THE BEY OF TUNIS

Capt. Richard F. Kuhn, formerly of Detroit, has been awarded the Medal of Distinction by the Bey of Tunis in recognition of the medical aid he gave to Tunisian civilians while serving as a flight surgeon for the Red Devil Flying Fortress Squadron. Dr. Kuhn, now serving in Italy, was given the high award comparable to the U. S. Distinguished Service Medal by a French general, according to a letter received by Dr. Kuhn's parents. Dr. Kuhn graduated from Wayne University College of Medicine, Detroit, in 1938 and entered the service in June 1942.

MEDICAL REPLACEMENT TRAINING CENTER

Brig. Gen. Raymond W. Bliss, director of the operations division for the Surgeon General, addressed several hundred graduates of the School for Medical Officers at the Medical Replacement Training Center, Camp Barkeley, Texas. The ceremonies marked the completion of a six week indoctrination course for the officers and the first time that such a course was offered at a medical replacement training center, where all facilities for diversified training are offered. The course stressed physical conditioning and field work.

NEW RADIATION THERAPY SECTION AT ARMY MEDICAL CENTER

Ceremonies marking the opening of the new Radiation Therapy Section of the Army Medical Center were held March 10 in the Red Cross Building, Washington, D. C. The opening address was made by Major Gen. Shelly U. Marietta, and papers were presented on The Cancer Problem in the Army by Brig. Gen. Fred W. Rankin, The Treatment of Cancer in an Army General Hospital by Lieut. Col. Rettig A. Griswold, The Development of Supervoltage Roentgen Rays by Major Milton Friedman, and The Postwar Cancer Problem by Dr. R. R. Spencer.

NEW OFFICERS OF THE AMERICAN MEDICAL SOCIETY ETO

At the annual meeting of the American Medical Society ETO, held at the headquarters, Eighth Air Force, the following officers were elected for the year 1944: Col. Herbert B. Wright, headquarters Eighth Air Force, president; Major Paul C. Morton, 49th Station Hospital, vice president; Lieut. Col. Theodore L. Badger, 5th General Hospital, secretary-treasurer; Lieut. Col. M. T. Kubin, 16th General Hospital, and Capt. Howard W. Rogers, 28th Division, executive committee.

CAPT. JOSEPH E. SCHENTHAL AWARDED LEGION OF MERIT

Capt. Joseph E. Schenthal, formerly of Baltimore, has been awarded the Legion of Merit by order of Lieut. Gen. George H. Brett, commander of the Caribbean defense area. The citation accompanying the award read "Captain Joseph E. Schenthal, Medical Corps, Army of the United States. For exceptionally meritorious conduct in the performance of outstanding service from Jan. 29, 1942 to March 9, 1943, as surgeon of a Coast Artillery regiment. From the beginning, Captain Schenthal displayed an extraordinary interest in his problems and particularly that of combating malaria. Largely due to his personal interest and efforts, high professional skill and devotion to duty, he was responsible to a marked degree for the sharp decrease in the malarial rate of his regiment." Dr. Schenthal graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1939 and entered the service June 1, 1941.

NAVY

NAVY DOCTORS FIND TONS OF MEDICAL SUPPLIES AT CAPE GLOUCESTER, NEW BRITAIN

Navy doctors attached to the Marine regiment that took the air fields from the Japanese at Cape Gloucester, New Britain, found tons of medical supplies, much of them in usable condition. Vitamin concentrates and drugs were destroyed, however, because of their unknown quality and strength. Prized finds were surgical and dental instruments, many of which had been plundered from army hospitals in the Philippines. Lieut. Joe P. Page, U.S.N.R., a dentist, exhibited a contra-angle handpiece for dental drills manufactured by S. S. White Dental Manufacturing Company. Neatly packed in a wooden box, stripped with metal, was a set of forceps and dental picks. Large boxes of gauze and cotton were salvaged by Marine quartermasters. Lieut. Comdr. Richard M. Forsythe, a former resident in surgery at Grasslands Hospital, Westchester County, N. Y., found a tracheotomy set for throat surgery and well packed anesthesia sets for parachute dropping. Some quinine of known quantity was salvaged. A German product similar to atabrine, a malaria preventive, is being tested for possible use there.

LIEUT. COMDR. TOM T. FLAHERTY RECEIVES SILVER STAR MEDAL

Lieut. Comdr. Tom T. Flaherty, formerly of Long Beach, Calif., has been awarded the Silver Star Medal. The citation accompanying the award is as follows: "For conspicuous gallantry and intrepidity in action while evacuating wounded aboard a Naval Transport Plane, attached to Marine Air Group Twenty-Five, operating in the Solomon Islands Area, Sept. 14-15, 1942. Flying in a cargo plane with emergency supplies to Henderson Field, Guadalcanal, to assist in evacuating wounded personnel, Lieutenant Commander Flaherty (then Lieutenant) courageously remained at his post despite continual bombing and strafing of the field by enemy aircraft, supervising and aiding in the loading of the wounded who were under his care. His fearless and untiring devotion to duty was in keeping with the highest traditions of the United States Naval Service." Dr. Flaherty graduated from the University of Southern California School of Medicine, Los Angeles, in 1939 and entered the service in August of that year.

THE NEW BRONZE STAR MEDAL

The Secretary of the Navy recently authorized that the ribbon bar for the new Bronze Star Medal, established February 4 by the President of the United States for both the United States Army and the United States Navy, will be Old Glory Red with an eighth-inch stripe of Royal Blue in the center with white piping on each side of the blue and at the edges of the bar. The ribbon bar will be 1⅜ inches wide and ½ inch long. The purpose of the new medal, which takes precedence next after the Navy and Marine Corps Medal and next before the Air Medal, has been described by the President, which description follows in part:

"There is hereby established the Bronze Star Medal . . . for award to any person who, while serving in any capacity in or with the Army, Navy, Marine Corps or Coast Guard of the United States on or after Dec. 7, 1941, distinguishes or has distinguished himself by heroic or meritorious achievement or service, not involving participation in aerial flight, in connection with military or naval operations against an enemy of the United States."

NAVY PERSONAL

The Navy Department recently announced the promotion of Rear Admiral Ross T. McIntire, Surgeon General of the Navy, to the rank of Vice Admiral.

MISCELLANEOUS

PROCEDURES GIVEN FOR SELECTING A. S. T. P. MEDICAL, DENTAL AND VETERINARY TRAINEES

As recently announced by the War Department, soldiers who remain in the Army Specialized Training Program after April 1 will be primarily those assigned to courses in medicine, dentistry, veterinary medicine and advanced engineering.

Procedures governing selection of medical, dental and veterinary trainees were announced on March 2. Meanwhile, procedures for the selection of trainees in engineering and foreign area and language to be retained now are under consideration. In addition, broad expansion of the Army Specialized Training Reserve Program is contemplated, with details to be announced publicly soon.

Enlisted men now assigned to the Army Specialized Training Program for instruction in medicine, dentistry and veterinary medicine will be continued in the program. Also Army Specialized Training Program soldiers currently enrolled in preprofessional courses will be continued in those studies and, on successful completion of that work, will be advanced to the medical or dental phase of the program.

Assignment to training in medicine and dentistry in the Army Specialized Training Program for the remainder of the year will be made from among enlisted men who prior to April 1 have been accepted for 1944 classes in contracting medical and dental schools.

Civilians now in medical or dental schools and those who have been accepted for a 1944 class in an accredited medical or dental school but who did not receive a call for induction prior to March 1 will not be assigned for Army Specialized Training Program training in medicine or dentistry.

Selection for preprofessional and subsequent professional training in medicine and dentistry will be restricted to soldiers who have completed their basic military training and have accomplished one of the following:

1. Passed an aptitude test for medical profession on successful completion of term 2 or term 3 in the Army Specialized training Reserve Program.

2. Received a satisfactory score in the Army-Navy (A-12, V-12) College Qualifying Test (men in this group must have satisfactorily completed at least a year of premedical or predental studies as civilians).

Priority will be given in the order as outlined. Any additional vacancies may be filled by soldiers selected on the basis of their proved abilities and academic background.

WARTIME GRADUATE MEDICAL MEETINGS

Additional subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

At Woodrow Wilson General Hospital, Staunton, Va.: Psychosomatic Medicine, Dr. O. B. Darden, March 30.

At Camp Pickett, Virginia: Physical Therapy in War Wounded, Major Ben L. Boynton, March 29.

At Ashford General Hospital, White Sulphur Springs, W. Va.: Shock, Burns and Fluid Balance (lecture, surgical ward rounds and clinical demonstrations), Dr. Alfred Blalock, March 27.

At Fort Eustis, Virginia: Recent Advances in Cardiovascular Disease, Dr. William B. Porter, March 30.

At Newton D. Baker General Hospital, Martinsburg, W. Va.: Drug Allergies, Dr. Leslie N. Gay, March 27.

METHYL BROMIDE PLACED UNDER ALLOCATION

The War Production Board recently announced that methyl bromide, commonly used as an insecticide, has been placed under allocation, effective March 1, by amending Miscellaneous Chemicals Order M-340 to include it. The maximum monthly small order exemption is fixed at 10 pounds. No other deliveries may be made without specific authorization.

PRISONER OF WAR MAIL

A directive has been issued that letters or postal cards addressed to American prisoners of war in German camps should be placed by the sender in an outer unsealed envelop, addressed simply "Postmaster—Prisoner of War Mail." The inner envelop or card should be addressed in accord with the directions previously given. The letter or card may then be dropped in a mail box without postage. When collected by a postman the outer envelop will be removed by the Post Office and the letter or card will be sent, without postmarking, to New York for censorship, or the letter or card may be given to a post office clerk, without the outer envelop, and the mail will be forwarded to New York.

The sole purpose of this procedure is to avoid placing postmarks that will be objectionable to German authorities—postmarks such as "V for Victory" and "Buy War Saving Stamps and Bonds." Air mail letters must not have stamps marked with slogans or patriotic ideas, nor must objectionable endorsements be placed on the wrappers or cartons of next of kin parcels. The War Shipping Administration has announced that the American Red Cross has purchased the S. S. *Spokane*, a freighter, to be used for carrying relief parcels to Americans who are in German prison camps.

VITAMIN A PLACED UNDER ALLOCATION

The War Production Board recently announced that vitamin A, which is sometimes used in overcoming night blindness, was placed under allocation for the first time. The action was taken to insure equitable distribution of the vitamin in the face of mounting demand. This increase in demand will exceed the volume of new supplies and make it necessary to draw on reserve. It was stated that this move would have no great effect on the public in the near future. Vitamin A occurs naturally in fish liver oils. Four synthetic vitamins already are under allocation. These are vitamin C, vitamin B_1, vitamin B_2 and nicotinic acid. Cod liver oil and tuna liver oil are not affected by the new order, No. M-373. Vitamin A in standard dosage forms or in food and feed compounds is also exempted.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, March 4, p. 655)

INDIANA

Ball Memorial Hospital, Muncie. Capacity, 229; admissions, 6,506. Nellie G. Brown, Superintendent (3 interns, resident—pathology, resident—mixed, May 1).

MASSACHUSETTS

Beth Israel Hospital, Boston. Capacity, 215; admissions, 6,314. Charles F. Wilinsky, M.D., Executive Director (intern—pathology).

NEW YORK

Norwegian Lutheran Deaconesses' Home and Hospital, Brooklyn. Capacity, 162; admissions, 4,106. Rev. C. O. Pedersen, Superintendent (4 interns, 3 residents—October 1).

PENNSYLVANIA

Fitzgerald Mercy Hospital, Darby. Capacity, 191; admissions, 5,380. C. T. McCarthy, M.D., Medical Director (interns—October 1).

St. Christopher's Hospital for Children, Philadelphia. Capacity, 85; admissions, 1,906. Mabel Barr, administrator (3 residents—pediatrics).

St. Margaret Memorial Hospital, Pittsburgh. Capacity, 129; admissions, 2,191. Adele M. Polk, R.N., Superintendent (2 interns—October 1).

WISCONSIN

Luther Hospital, Eau Claire. Capacity, 146; admissions, 4,377. N. E. Hanshus, Superintendent (interns—March, July, November; resident—July).

ORGANIZATION SECTION

COMMITTEE ON POSTWAR MEDICAL SERVICE

The Committee on Postwar Medical Service met in Washington, D. C., on March 4. There were present Dr. Irvin Abell, Dr. F. G. Blake, Commander Edward L. Bortz, Dr. William B. Breed, Surg. Gen. Warren F. Draper, Dr. Walter F. Donaldson, Capt. W. E. Eaton, Dr. Morris Fishbein, Dr. Evarts Graham, Dr. Alan Gregg, Dr. C. M. Griffith, Dr. E. E. Irons, Dr. Roger I. Lee, Lieut. Col. Harold Lueth, Dr. James M. Mason, Dr. Walter W. Palmer, Dr. J. E. Paullin, Dr. G. M. Piersol, Brig. Gen. Fred W. Rankin and Dr. H. H. Shoulders.

QUESTIONNAIRE ON POSTWAR NEEDS

After the minutes of the previous meeting were approved, the chairman requested Dr. Lueth to discuss the problems involved in sending out questionnaires to physicians in the armed services on the subject of their expected needs on return to civilian life. Dr. Lueth discussed the sample questionnaire and the methods to be followed in phrasing its questions and interpreting the answers. It was moved, seconded and passed that a revised questionnaire be sent out at the earliest possible time to physicians in military service. The purpose of such a form of inquiry is of course to define more clearly the types of needs and requests of men on return from military service. From many points of view letters would be preferable to the mere answers to specific questions, but statistical treatment of letters is obviously difficult.

The possibility was suggested that the records of the Procurement and Assignment Services could be of value in postwar location or relocation problems. The secretary was instructed to inquire from the Honorable Paul V. McNutt in regard to this matter.

INFORMATION BUREAU AT HEADQUARTERS

Dr. Lee reported that the Board of Trustees of the American Medical Association was in favor of the creation, at staff headquarters of the Association, of an information service bureau, though not of the ordinary placement type but rather a clearance agency for information on positions, opportunities and requests for physicians' services. Further planning will be needed as to the way in which such a service is to be organized.

Dr. Palmer stated that the principal need in further training will be related to the creation of additional places for assistant residents and residents in hospitals, including hospitals not now having such posts. The following motion was passed: It is of importance to the general welfare that an increased number of assistant residencies and residencies in hospitals (including hospitals now possessing such posts) be created for the education, training and adjustment of young physicians returning from military service to civilian practice.

It was also voted that the committee authorizes the chairman to appoint a subcommittee whose service will be offered to the Board of Trustees as available at any hearings on bill S. 1509 dealing with educational opportunities.

NEW MEMBERS FOR COMMITTEE

In the light of these motions and in connection with the committee's program as a whole, it was voted to invite representation on the committee from the Association of American Medical Colleges, the American Hospital Association, the Catholic Hospital Association, the Federation of State Licensing Boards, the Procurement and Assignment Services and the Advisory Board for Medical Specialties.

MEDICAL SUPPLIES

It was voted that inquiry be made of the proper authorities as to the eventual status of medical supplies at present under the Office of Civilian Defense.

It was voted that the next meeting of the committee be held Saturday, April 29, in New York.

OFFICIAL NOTES

MORE ELECTRICAL TRANSCRIPTIONS FOR RADIO PROGRAMS

The Bureau of Health Education announces the completion and immediate availability of a third series of electrically transcribed radio broadcasting records for local use by medical societies or in projects approved by the local medical society. This series consists of twelve broadcasts on six records. It is entitled Dodging Contagious Diseases.

Requests for these new transcriptions may be sent at once to the Bureau of Health Education of the American Medical Association, 535 North Dearborn Street, Chicago. There is no charge for the use of this material except the nominal cost of returning the records in the shipping container which is provided.

The records play ten minutes each, allowing five minutes of the usual fifteen minute radio schedule to be used locally for music or announcements by the local society.

Dodging Contagious Diseases is the third series of electrical transcriptions available. The first series, American Medicine Serves the World at War, and its continuation under the title Medicine Serves America, consists of eight broadcasts, additions being made month by month. The second series, Before the Doctor Comes, consists of sixteen broadcasts. All these series are available usually on short notice. From time to time, however, waiting lists exist. It is best to make reservations in advance.

A fourth series of transcriptions designed especially for broadcasts to and use in elementary schools is being developed under the title Health Heroes and Hoboes. This series will not be ready until the autumn term of school in 1944.

DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 4:30 p. m. Eastern war time (3:30 Central war time, 2:30 Mountain war time and 1:30 Pacific war time.)

The titles and guest speakers for the next three programs are as follows:

March 18. "You Must Help Win This War."
Speaker, Harold A. Vonachen, M.D., Medical Director, Caterpillar Tractor Company, Peoria, Ill.

March 25. "Our Blood For Our Boys."
Speaker, G. Canby Robinson, M.D., National Director, Blood Donor Service, American Red Cross, Washington, D. C.

April 1. "White Reaper."
Speaker to be announced.

MEDICAL LEGISLATION

STATE MEDICAL LEGISLATION

Kentucky

Bill Introduced.—H. 362 proposes to enact an entirely new pharmacy practice act. Among other things this bill, as it was amended in the House March 6, proposes to prohibit the sale at retail of aminopyrine, barbituric acid, cinchophen, dinitrophenol, sulfanilamide, thyroid or their derivatives except on the written prescription of a licensed physician, dentist or veterinarian.

Mississippi

Bill Enacted.—S. 84, to amend the uniform narcotic drug act, was approved by the governor February 22. The new law so defines narcotic drug as to include isonipecaine, which is defined as "the substance identified chemically as 1-methyl-4-phenyl-piperidine-4-carboxylic acid ethyl ester, or any salt thereof by whatever trade name identified."

Bills Introduced.—S. 324 proposes (1) to change the name of the South Mississippi State Charity Hospital to Laurel Community Hospital, (2) to provide for the control and management of that hospital by a board of trustees and (3) to permit certain portions of the hospital to be available for pay patients. S. 332 and H. 691 propose to authorize the boards of supervisors of Tate, DeSoto and Marshall counties to establish and operate a joint hospital. H. 668 proposes to prohibit any place serving or preparing food for human consumption from employing any food handler therein who does not possess a certificate from an appropriate public health authority that he or she has been examined and found free from venereal disease. H. 701 proposes to authorize the board of supervisors of Madison County to expend not more than $100 on each needy maternity case. H. 708 proposes to appropriate $655,380 to defray the expenses of the state board of health for the period beginning July 1, 1944 and ending June 30, 1946. H. 710 proposes to appropriate $150,000 to defray the expenses of the state board of health in conducting a program of eradication and control of venereal diseases for the period beginning July 1, 1944 and ending June 30, 1946. H. 763 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a certificate from a licensed physician, based on physical and laboratory examination, that the party is free from venereal disease.

New York

Bills Introduced.—S. 1336 and A. 1678, to amend the laws relating to the practice of medicine, propose that the examination required for a license to practice medicine shall be dispensed with in the case of any applicant who has not previously taken and failed such examination, who meets all the requirements of law and who subsequent to Dec. 7, 1941 and for at least twelve consecutive months has served in and has been honorably discharged from the medical corps of any branch of the armed forces. S. 657 and A. 1537 propose to make it a felony for a person to prescribe, supply or administer to a woman or advise or cause a woman to take any substance or to use or cause to be used any instrument or other means with intent to producing an abortion other than a therapeutic abortion. A therapeutic abortion is defined in the bill as "the artificial interruption of an intrauterine pregnancy before the period of viability (up to twenty-eight weeks of gestation) is reached where the continuance of such pregnancy would jeopardize the life of the woman or so aggravate the physical or mental disease from which she suffers as seriously to impair her health or threaten her life. It may be performed only by a physician duly licensed in the state of New York and only in a hospital recognized by the department of social welfare of New York state or the department of health of New York state or approved by the American College of Surgeons and/or the American Medical Association, after written opinions as to its necessity have been obtained from two competent, qualified and recognized consultants in the respective specialties involved, which said written opinions shall be incorporated in the records of the hospital." A. 1594 proposes to prohibit the practice of x-ray diagnosis, x-ray therapy or radium therapy, except by licensed physicians, dentists or chiropodists. "X-ray diagnosis," according to the bill, "means that method of medical practice in which demonstration and examination of the normal and abnormal structures, parts or functions of the human body are made by use of x-rays, and any person who holds himself out to diagnose or able to make or makes any interpretation or explanation by word of mouth, writing or otherwise of the meaning of a fluoroscopic or registered shadow or shadows of any part of the human body made by the use of x-rays, and also the use of x-rays or radium for the treatment of any human ailment shall be deemed to be engaged in the practice of medicine within the meaning of this article." A. 1930, to amend the uniform narcotic drug act, proposes so to define narcotic drug as to include isonipecaine, which is defined in the bill as "the substance identified chemically as 1-methyl-4-phenyl-piperidine-4-carboxylic acid ethyl ester, or any salt thereof by whatever trade name identified." A. 1826, to amend the laws relating to the practice of medicine, propose to make it a cause for revocation of a license for the physician concerned to participate in the division, transference, assignment, rebating, splitting or refunding of his fee for medical care.

South Carolina

Bill Enacted.—H. 945, to amend the uniform narcotic drug act, was approved by the governor March 4. The new law so defines narcotic drug as to include isonipecaine, which is defined as "the substance identified chemically as 1-methyl-4-phenyl-piperidine-4-carboxylic acid ethyl ester, or any salt thereof by whatever trade name identified."

WOMAN'S AUXILIARY

Colorado

About 700 service men were entertained by the Denver County auxiliary recently at a buffet supper at the Service Men's Center.

The Pueblo County auxiliary and the Medical Auxiliary of Northeastern Colorado sewed for the Red Cross recently.

New Jersey

The year's project of Essex County is child welfare. The auxiliary gets in touch with nursing mothers who have an excess of milk, obtains this excess milk and sees that it reaches Coit Memorial Hospital, where it is processed and held in the milk bank until needed.

The Gloucester County auxiliary has made each member responsible for at least two *Hygeia* subscriptions. Profits from subscriptions will be used to cover expenses of the reciprocity tea and for the annual donation to the Red Cross.

Hudson County auxiliary is making a collection of recipes to be published in a book and sold for the Benevolent Fund.

Mercer County auxiliary was hostess in January to the Woman's Auxiliary to the Medical Society of New Jersey.

West Virginia

At a recent meeting of the Woman's Auxiliary to the McDowell County Medical Society, Dr. C. W. Vick spoke on "History of Medicine in McDowell County." Books, magazines and games were sent to the Ashford General Hospital at White Sulphur Springs.

The Raleigh County auxiliary met in November. Mrs. Ross P. Daniel, president, discussed the Wagner-Murray-Dingell bill.

A luncheon meeting of the Woman's Auxiliary to the Kanawha Medical Society was held at the Charleston Woman's Club in November. Mrs. A. A. Shawkey reviewed "The Story of Doctor Wassell." The Christmas party was held at the home of Mrs. A. C. Wilson.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Personal.—In a resolution sent to Governor Sparks the Jefferson County Medical Society has recommended the appointment of Dr. James S. McLester, Birmingham, for a post on the medical advisory board of the University of Alabama Medical School to be established in Birmingham.

State Medical Meeting.—The Medical Association of the State of Alabama will conduct its annual session at the Whitley Hotel, Montgomery, April 18-20, under the presidency of Dr. Fred W. Wilkerson, Montgomery, and with the Montgomery County Medical Society acting as host. Out of state speakers on the program will include:

Lieut. Col. Walter O. Klingman, M. C., A. U. S., Psychiatric Problems in Flying Personnel.
Dr. John E. Walker, Columbus, Ga., The Significance of the Wide S Wave Pattern of the Electrocardiogram.
Dr. Paul W. Auston, West Point, Ga., The Value of the Preemployment Examination in an Industrial Health Program.
Dr. Arthur Neal Owens, New Orleans, Some Recent Trends in the Advancement of Plastic Surgery.
Dr. Francis E. Le Jeune, New Orleans, The Prognosis and Treatment of Cancer of the Larynx.
Dr. Randolph Lyons, New Orleans, The Schemm Treatment of Chronic Heart Failure with Edema: Report of Illustrative Case.
Dr. Morris Fishbein, Editor, THE JOURNAL, Planning for Postwar Medical Services.
Dr. Cobb Pilcher, Nashville, Tenn., The Treatment of Craniocerebral Wounds.

The Jerome Cochran Lecture will be delivered by Dr. Tinsley R. Harrison, dean of the Southwestern Medical College of the Southwestern Medical Foundation, Dallas, Texas, on "The Value and Limitations of Laboratory Tests in the Practice of Medicine."

COLORADO

Dr. Lull Resigns from State Board.—Dr. Lynn J. Lull, Denver, has resigned as director of the venereal disease control division of the Colorado State Division of Public Health. Newspapers report that he will take over a similar position for the Idaho State Board of Health at Boise.

CONNECTICUT

Psittacosis.—The Hooper Foundation for Medical Research of the University of California, San Francisco, recently confirmed the diagnosis of psittacosis in 2 parrakeets that had been shipped illegally into Connecticut from Texas by railway express. One of the birds died soon after arrival. The parrakeets had been intercepted in Connecticut before they had been delivered to the mother of a soldier stationed in Texas. It is reported that during 1943, preceding the arrival of these infected birds, four other illegal shipments of birds had been reported. Three had been made from Texas and the other from the District of Columbia. In an effort to preclude further illegal shipments of parrakeets by its facility, the railway express agency has recently issued a traffic department circular giving detailed information to their agents with regard to the legal requirements for the acceptance of birds of the psittacosis family for shipment from one state to another.

DISTRICT OF COLUMBIA

Board of Visitors.—The District commissioners have appointed a board of visitors for the municipal hospitals, Washington. According to *Medical Annals of the District of Columbia* a lay board of visitors can be of great value to an administrator by bringing the layman's point of view and acting as friendly advisers. *Medical Annals* further states that this is a step that should redound to the benefit of the public hospitals of the District.

GEORGIA

Convicts to Serve in Malaria Tests.—More than 200 inmates of the federal penitentiary in Atlanta have volunteered to serve as human "guinea pigs" for experiments seeking a malaria remedy more potent than quinine or atabrine. Newspapers announced that experiments would be conducted in cooperation with the National Research Council acting for the Office of Scientific Research and Development and its committee on medical research. The study will be under the supervision of the U. S. Public Health Service and will be integrated with similar undertakings at a number of civilian institutions. At the Federal Reformatory, El Reno, Okla., 300 inmates are at present voluntarily taking gas gangrene toxoid inoculations. John T. Wright, A. Surg., U. S. Public Health Service, is in charge, the results of which have not yet been announced. In a newspaper report concerning the project at New Jersey State Prison last May, when 317 inmates volunteered in a test of a vaccine to be used against epidemic encephalitis, it was stated that there was a mild reaction in about 3 per cent of the cases. Only one volunteer was seriously affected; he almost died but recovered. The New Jersey study was under the supervision of Dr. Robert Ward, New Haven, Conn., for the U. S. Army.

IOWA

Personal.—Dr. Frank O. Kershner, Clinton, has retired from active practice on account of ill health.——Dr. Willis E. Brown, assistant professor of obstetrics and gynecology, University of Nebraska College of Medicine, Omaha, has been appointed to a similar position at the State University of Iowa College of Medicine, Iowa City.

State Medical Meeting.—The ninety-third annual session of the Iowa State Medical Society will be held at the Hotel Fort Des Moines, April 20-21, under the presidency of Dr. Lee R. Woodward, Mason City. The guest speakers will include:

Dr. Anton J. Carlson, Chicago, Physiolgic Aspects of Cardiac Disease.
Dr. William N. Hahn, Omaha, Procedures Following Some of the More Frequent Eye Injuries.
Dr. Clarence D. Selby, Detroit, A Postwar Industrial Medical Program.
Lieut. Col. Malcolm J. Ferrell, M. R. C., Developments in Military Neuropsychiatry.
Dr. Walter H. Judd, Washington, D. C., Postwar Planning.
Dr. Norman F. Miller, Ann Arbor, Mich., Toxemias of Late Pregnancy.
Dr. Alfred W. Adson, Rochester, Minn., The Activities of the Council on Medical Service and Public Relations and the Responsibilities of Individual Physicians.

The State Society of Iowa Medical Women and the American Medical Women's Association, Branch 19, will meet April 20. The Woman's Auxiliary to the state medical society will hold its fifteenth annual session at the Hotel Kirkwood, Des Moines, April 20-21.

KANSAS

Executive Secretary Resigns.—Mr. Robert Brooks, Topeka, has resigned as executive secretary of the Kansas Medical Society, effective February 1. He had held the position since October 1942 after Mr. Clarence Munns was granted leave of absence to enter military service. Mrs. Margaret Foster, secretary in the executive office of the state society, has been named acting executive secretary.

KENTUCKY

Changes in Health Officers.—Dr. James A. Campbell, health director of Scott County, has been transferred to a similar position in Mason County. Dr. George M. Jewell, Paris, health director of Bourbon County, has been assigned to Scott County for two days each week.

MASSACHUSETTS

Health Department Opens Veterans' Clinic.—The state department of mental health has opened an outpatient clinic for veterans of World War II from Essex County. The clinic is in charge of Dr. Clarence A. Bonner, medical superintendent of the Danvers State Hospital, Hathorne, and is interested in men and women who have been discharged from the armed forces or rejected from their draft boards because of such symptoms as nervous heart or nervous stomach, dizziness, headaches, fainting spells, fits and seizures, irritability, outbursts of temper, easy fatigability and poor memory. Rehabilitation efforts will be instituted to help these persons become readjusted in the community and in industry.

MICHIGAN

Society News.—The Wayne County Medical Society and the Michigan Society of Obstetricians and Gynecologists were addressed in joint session March 6 by Dr. M. Edward Davis, Chicago, on "Modern Management of the Third Stage and Its Complications."——On January 12 Dr. Roy D. McClure and the surgical staff of the Henry Ford Hospital, Detroit, entertained the members of the Flint Academy of Surgery at a scientific meeting, luncheon and surgical clinic.

Dr. De Kleine Named State Health Commissioner.—Dr. William De Kleine, for many years director of medical and health service of the American Red Cross, on February 18 has been named state health commissioner for Michigan. The appointment would be for the remaining three year term of the late Dr. Henry Allen Moyer, if confirmed by the senate, newspapers report. Dr. De Kleine graduated at Northwestern

University Medical School, Chicago, in 1906 and received his master of science degree at the University of Michigan School of Public Health, Ann Arbor, in 1915. For a number of years he practiced medicine in Grand Haven, subsequently throughout his career maintaining his residence there. He served in various capacities on the state board of health. In 1927 he became associated with the American Red Cross during the Mississippi Valley flood and the following year was named director of medical and health service. He resigned in 1941. He once served as president of the Michigan Tuberculosis Association and of the Michigan Public Health Association.

MINNESOTA

Dr. Hansen Named Director of Ophthalmology Division.—Dr. Erling W. Hansen, clinical assistant professor of ophthalmology at the University of Minnesota Medical School, Minneapolis, has been appointed clinical professor and director of the division of ophthalmology at the university.

NEW JERSEY

The Harrison Martland Lecture.—The ninth annual Harrison S. Martland Lecture will be given by Dr. Otto Loewi, research professor of pharmacology, New York University College of Medicine, March 22, at the Academy of Medicine of Northern New Jersey, Newark. This annual lecture is given in honor of Dr. Martland by the Essex County Anatomical and Pathological Society.

New Health Exhibits.—Seven new cases of material which continues the story of the Human Body, How It Works, were placed on exhibition in the Newark Museum in the science department, March 7. The addition to the museum's display was made possible by a gift of the late Louis Bamberger, honorary president of the museum. In the planning of the exhibits a special committee was appointed by the Academy of Medicine of Northern New Jersey, of which Dr. Royal A. Schaff, Newark, is chairman. The group includes displays on How We Hear, How We Breathe, Of These We Are Made, Life Continues, a case on posture and one with questions and answers relating to the skin. Two cases related to the ear show the manner in which sound travels from the outer ear to the auditory nerve, with a set of chimes indicating what happens when the nerve impulses reach the brain.

NEW YORK

Veterans' Loan Fund. — The Westchester Medical Veterans' Loan Fund has been set up by members of the Medical Society of the County of Westchester. The fund will be available for returning members of the service to aid in reestablishing their private practice or serve other needs which may be required.

Graduate Lecture.—On April 19 Dr. Harvey B. Matthews, clinical professor of obstetrics and gynecology, Long Island College of Medicine, Brooklyn, will address the Saranac Lake Medical Society on "Forceps Delivery: Indications, Dangers and Accomplishment." The lecture is sponsored cooperatively by the state medical society and the state department of health.

Health Department Divisions Moved.—The offices of several units of the state department of health in Albany were moved recently. The office of medical administration, the division of maternity, infancy and child hygiene and the division of orthopedics are now located on the eighth floor of the Bond Building, 74-76 State Street. The division of cancer control and the division of public health education have quarters in the New York State Teachers Association Building, 152 Washington Avenue. The bureau of narcotic control has been moved to the fifteenth floor of the State Office Building. The work of the bureau of pneumonia control, formerly under the direction of the assistant commissioner for medical administration, has been reintegrated with that of the division of communicable diseases and space allotted to its staff on the fifteenth floor of the State Office Building.

New York City

Health Topics at Safety Meeting. — At the fifteenth annual safety convention and exposition of the Greater New York Safety Council, in the Hotel Pennsylvania, March 28-30, sessions will be devoted to occupational diseases and industrial nursing, women workers and eye protection.

Physiologist Dies. — Helen Copeland Coombs, Ph.D., instructor in physiology at Brooklyn College, Brooklyn, died March 4, aged 52. Dr. Coombs had done special research on the nervous mechanism of respiration, cerebral anemia, cardiovascular nervous mechanism, neurophysiology and pharmacology and relation of calcium and phosphorus metabolism to the nervous system.

Physician Sentenced for Abortion.—Dr. Alice M. N. Chairman was sentenced to a year in the penitentiary on February 23 by Judge Jacob Gould Schurman Jr. in general sessions for performing an abortion on an 18 year old woman, according to the New York *Times*. The *Times* also stated that Dr. Chairman was practicing medicine without a license, hers having been revoked in 1940.

First Lisa Award.—The Society of the Alumni of City (Charity) Hospital announces the presentation of the first James R. Lisa Award to Lieut. Chauncey L. Royster, M. C., A. U. S. Lieutenant Royster received the award for his work on "The Cardiac Findings in Syphilis Combined with Hypertension, in the Absence of Aortic Regurgitation." The Lisa Award was established by the Alumni Society of the City Hospital to recognize work in research medicine done in the laboratories of the hospital under Dr. Lisa's direction, the award to be made by Dr. Lisa at appropriate times to the worker deemed by him to be worthy of it. The award consists of a medallion and an honorarium of several hundred dollars (THE JOURNAL, Jan. 23, 1943, page 271). Lieut. Royster graduated at Cornell University Medical College in 1935 and served his internship and residency at the city hospital.

Center in Tropical Medicine to Be Developed at Columbia. — Plans to establish a world training center in tropical medicine at the Columbia University College of Physicians and Surgeons were announced to the press February 26 by Dr. Harry S. Mustard, professor of public health practice and director of the DeLamar Institute of Public Health at Columbia. The plans call for new building facilities, a greatly expanded personnel and additional laboratories and equipment. Recently the university established a department of tropical medicine in charge of Dr. Harold W. Brown as professor of parasitology (THE JOURNAL, Nov. 6, 1943, p. 647). The entire program of tropical medicine at Columbia will be under the direction of the DeLamar Institute of Public Health and has been made possible by a grant of $150,000 from the Josiah Macy Jr. Foundation (THE JOURNAL, Jan. 23, 1943, p. 271). In addition the John and Mary R. Markle Foundation has given a sum for research in filariasis.

Welfare Council to Be Reorganized. — The Welfare Council of New York City, a federation of 700 local health and welfare agencies, will be reorganized to carry out more effectively its purpose of "contributing to the strategic employment of all resources existing or projected to meet present and foreseeable welfare and health needs of the City of New York." The action stemmed from the approval of a report on a recently completed eighteen months survey. Principal changes in the new plan affect representation in the directing bodies of the Welfare Council, and the plan calls for the appointment of a long range planning committee whose composition will insure "broad consideration of problems that cross the lines arbitrarily separating the fields of the other standing committees." The Welfare Council of New York City was founded in 1925. Its present administrative structure consists of a board of directors of 87 persons, both lay and professional, and an executive committee of 39. Both figures include certain ex officio members. The new plan calls for the reduction of these numbers by more than half.

Experimental Program on Industrial Health Education.—At a dinner on February 28 in the Hotel St. George, Brooklyn, the Fort Greene industrial health committee launched a demonstration program on health education for industrial workers in the Fort Greene District of Brooklyn. The project will be run for one year as a cooperative undertaking of management, employee groups, the New York City Health Department, the medical profession and a number of voluntary health agencies. It is anticipated that about 150,000 persons employed in the area will be reached by the drive to reduce preventable accidents, illness and resultant absenteeism. Headquarters for the project are in the Fort Greene Health Center of the New York City Health Department, 295 Flatbush Avenue Extension, Brooklyn. A panel discussion featured the dinner meeting on "Here's to Your Health" and was participated in by Reginald E. Gillmor, president of the Sperry Gyroscope Company; Erval R. Coffey, assistant surgeon general, U. S. Public Health Service; Dr. Victor G. Heiser, consultant on industrial health, National Association of Manufacturers; Dr. Leo S. Schwartz, Brooklyn, president, Medical Society of the County of Kings, and Dr. Jacob H. Landes, Brooklyn, health officer of the Fort Greene District. Mr. Gillmor and Louis Hollander, manager of the other New York Joint Board, Amalgamated Clothing Workers of America, are co-chairmen in the program. "Here's to Your Health" is also the title of an educational bulletin, the first issue of which appeared March 1.

OHIO

The Hanna Lecture. — Francis J. W. Roughton, Ph.D., lecturer in physiology, Cambridge University, England, will deliver the forty-ninth Hanna Lecture before the Academy of Medicine of Cleveland, April 12, at the Institute of Pathology, 2085 Adelbert Road. His subject will be "Some Recent Work on the Respiratory Chemistry of the Blood."

Diabetes in Children.—The Council on Diabetes of the Public Health Federation, Cincinnati, in cooperation with various health departments, is asking that physicians report to the secretary of the council the names and addresses of diabetic patients who are 18 years of age or younger. The council proposes to assist school nurses in their effort to have pertinent information with reference to these children on pupils' health cards. Names and addresses should be sent to Mrs. Joseph N. Gantz, secretary, Council on Diabetes, 312 West Ninth Street, Cincinnati 2.

Postgraduate Assembly.—The Mahoning County Medical Society will hold its sixteenth annual postgraduate assembly at the Pick-Ohio Hotel, Youngstown, April 19. At the afternoon session speakers will be Drs. William D. Collier, Youngstown, on "Clinical Problems Concerned with Blood Incompatibilities"; James Ross Veal, Washington, D. C., "Surgery of Thrombosis of the Peripheral Veins," and Edgar C. Baker, Youngstown, "Venography of the Lower Extremity." A dinner session will be addressed by Dr. Veal on "Acute Obstruction of the Small Intestines" and Dr. Eugene R. Whitmore, Washington, "Postwar Problems of Tropical Diseases in Civilian Practice."

New Appointments Under Research Expansion Program.—Fred W. Oberst, Ph.D., Lexington, Ky., has been placed in charge in the newly organized biochemistry department at the William S. Merrell Company, Cincinnati, and Harold W. Werner, Ph.D., has been named head of the department of pharmacology. The new department of biochemistry is located in the Cincinnati office of the Merrell Company and is one of the various units that comprise the research laboratories. Dr. Oberst has been engaged in biologic research on narcotics and drug addiction at the U. S. Public Health Service Hospital, Lexington, and Dr. Werner has been assistant professor of physiology and pharmacology at the University of North Dakota School of Medicine, Grand Forks, and pharmacologist at the National Institute of Health, Bethesda, Md.

PENNSYLVANIA

Society News.—Dr. George P. Guibor and Mr. Austin B. Belgard, Chicago, and Dr. Chevalier L. Jackson, Philadelphia, will be the guest speakers at a meeting of the Reading Eye, Ear, Nose and Throat Society in Reading, April 19. The program will include clinics, conferences on the conservation of hearing and optical centers and four papers on motor disturbances (diagnosis, use of prisms, use of atropine, surgery). A lecture on "The Bronchial Tree" will also be given.

Philadelphia

Annual Health Institute.—The Woman's Auxiliary of the Philadelphia County Medical Society will sponsor its fourteenth annual health institute, April 11, at the Philadelphia County Medical Society. "Health Trends" will be the theme of the program, which will be presented by:

Dr. David A. Cooper, Mass X-Ray in Tuberculosis Case Findings.
Dr. Hubley R. Owen, Plans for the Medical Division of the Board of Education.
Dr. George Morris Piersol, Plans for New Developments in Physical Therapy.
Miss Theresa I. Lynch, Trends in Hospital Nursing.
Miss Mary L. Poole, The Functions of a Social Service Department in the Hospital.
Dr. Fraaklin D. Murphy, Dramatic Results from Modern Chemotherapy.
Capt. Jesse W. Allen (MC), U. S. Navy, Movies: Latest Authentic Eastern War Pictures.

Copyright of Pharmaceutical Textbook Transferred to College of Pharmacy.—A copyright of the textbook "Remington's Practice of Pharmacy" was recently transferred to the corporate body of the Philadelphia College of Pharmacy and Science as a memorial to the late Joseph P. Remington, dean of the college. The ownership of the copyright has been vested in the heirs of the Remington estate for decades. The gift was presented officially by Rev. William P. Remington, bishop of Oregon, acting in behalf of the living legatees. In accepting the gift the board of trustees of the college at once formulated plans whereby its revision would be undertaken so as to continue it as a widely accepted pharmaceutical reference authority and textbook. Ernest Fullerton Cook, Pharm.D., for many years assistant to Dean Remington, has been appointed editor for the current revision.

RHODE ISLAND

Personal. — Dr. Reuben C. Bates, Providence, has been elected a member of the governing council of the American Association of Medical Milk Commissions. Dr. Bates has served for many years as secretary of the Medical Milk Commission of the Providence Medical Association. —— Comdr. William A. Stoops (MC), U. S. Naval Reserve, has been appointed president of the Newport Board of Health, and Dr. James C. Callahan was appointed secretary and a member of the board for a five year term. Dr. Callahan succeeds Dr. Samuel Adelson.

TEXAS

Graduate Assembly of Negro Physicians.—The eighth annual postgraduate assembly of Negro physicians in Texas was held at Prairie View State Normal and Industrial College, Prairie View, March 6-8. The assembly was sponsored by the State Medical Association of Texas, Lone Star State Medical, Dental and Pharmaceutical Association, National Tuberculosis Association, Texas Tuberculosis Association, Texas State Board of Health and the Prairie View State Normal and Industrial College. Dr. Arild E. Hansen, Galveston, addressed a public health meeting Tuesday evening on "The Practicing Physician's Responsibilities in the Problem of Child Health." Other speakers on the program included:

Dr. Edward L. Turner, Nashville, Tenn., Tropical Diseases as They May Affect Medical Practice in the United States.
Dr. Clarence Leon Wilson, Chicago, Some Misfortunes in Anesthesia in Labor.
Dr. William Roderick Brown Jr., Pittsburgh, Correlation of Criteria for Early Diagnosis in Pulmonary Tuberculosis.
Dr. Shirley S. Bowen, Houston, Therapeutic Principles in the Treatment of Syphilis.
Dr. Frank H. Lancaster, Houston, The Use of Sulfa Drugs in Children.
Dr. Ludwik Anigstein, Galveston, The Dysenteries.
Dr. John Potts, Fort Worth, Chest Pains as Diagnostic Leads and Diagnostic Factors.
Dr. Theodore K. Lawless, Chicago, The Clinical Manifestations of Syphilis.
James L. Tenney, Austin, administrative assistant, maternal and child health bureau, Texas State Board of Health, The Program of the U. S. Children's Bureau for Emergency Care of Wives and Infants of Servicemen.

WEST VIRGINIA

License Restored.—The license of Dr. Elmer G. Kesler, Williamsburg, was probationally restored recently with the provision that he would not apply for a narcotic permit or use narcotics or alcohol in any form. He was also directed to report to the public health council at quarterly intervals.

GENERAL

Dietetic Association Changes Date of Meeting.—The annual meeting of the American Dietetic Association will be held at the Palmer House, Chicago, October 25-27, instead of at the Stevens Hotel, October 17-19 as was previously announced (THE JOURNAL, February 26, p. 587).

Examinations in Ophthalmology.—The American Board of Ophthalmology announces that future examinations will be held in New York June 2, 3 and 5 and in Chicago October 5-7. The address of the board has been changed from P. O. Box 1940, Portland, Maine, to 704 Congress Street, Portland.

Society News.—The American Association for the Surgery of Trauma will hold its annual meeting at the Edgewater Beach Hotel, Chicago, June 9-10. Dr. Gordon M. Morrison, 520 Commonwealth Avenue, Boston, is the secretary.——The Catholic Hospital Association of the United States and Canada will conduct its twenty-ninth annual convention and second wartime conference at the Kiel Municipal Auditorium, St. Louis, May 21-26.

Dr. Winslow Named Editor of Public Health Journal. —Charles-Edward A. Winslow, Dr.P.H., Anna M. R. Lauder professor of public health, Yale University School of Medicine, New Haven, has been appointed editor of the *American Journal of Public Health*, succeeding Dr. Harry S. Mustard, New York. Dr. Winslow will assume his new position with the April issue. Dr. Winslow was president of the American Public Health Association in 1926 and in 1942 received a certificate for forty years of continuous membership and the Sedgwick Memorial Medal for distinguished service to public health.

Postgraduate Courses of College of Physicians.—The American College of Physicians has arranged a group of postgraduate courses. The first will be conducted April 10-15 at the University of Michigan Medical School and University Hospital, Ann Arbor, and will be devoted to general medicine. Members of the faculty at the medical school will cooperate in the instruction. "Clinical Medicine with Special Emphasis

upon the Hematologic Viewpoint" will be the theme of the second course, April 17-22, at the Ohio State University College of Medicine, Columbus, with members of the school faculty cooperating. The third course will be devoted to selected phases of internal medicine and will be conducted at the medical clinic at the Massachusetts General Hospital, Boston. Members of the faculty of Harvard Medical School will direct the instruction.

Conference of State and Provincial Health Authorities.—The fifty-ninth annual Conference of State and Provincial Health Authorities of North America will be held in Washington, D. C., March 22, in the District Medical Society Building, under the presidency of Dr. J. Lynn Mahaffey, Trenton, N. J. Among the speakers will be:

Dr. Stanley H. Osborn, Hartford, Conn., Dr. John T. Phair, Toronto, and James G. Townsend, medical director, U. S. Public Health Service, Industrial Health.
Dr. Kendall Emerson, New York, Postwar Problems of Tuberculosis.
Dr. Haven Emerson, New York, Local Health Units.
Dr. Wilton L. Halverson, Los Angeles, Training of Duration Public Health Personnel.

A round table discussion will be held on public health nutrition problems with Dr. Walter E. Wilkins, Raleigh, N. C., of the War Food Administration, as chairman.

Prizes for Research in Allergy.—Two annual awards have been established under the sponsorship of the American Academy of Allergy, effective January 1. One is the Abbott Award, which will consist of an annual prize of $200 established by the Abbott Laboratories of Chicago, to be granted annually for the most important advancement in the field of allergy or for the development of a research problem on any phase of the subject. This prize will be considered for both members and nonmembers of the academy. The second award, to be known as the Secretary's Prize, is a medal to be given annually to a member of the academy for "the most outstanding achievement of the year in the general field of allergy." The American Academy of Allergy was formed recently when the Society for the Study of Asthma and Allied Conditions and the American Association for the Study of Allergy merged (THE JOURNAL, Dec. 25, 1943, p. 1129).

State and Territorial Health Officers.—The forty-second annual conference of the Association of State and Territorial Health Officers with the U. S. Public Health Service and the U. S. Department of Labor Children's Bureau will be held at the auditorium of the Medical Society of the District of Columbia, Washington, March 20-23, under the presidency of Dr. Irl C. Riggin, Richmond, Va. Among the speakers on the program will be:

Dr. G. Foard McGinnes, Washington, D. C., Utilization of Blood By-Products.
Thomas Parran, Surgeon General, U. S. Public Health Service, The State of the Nation's Health.
Hon. Paul V. McNutt, administrator, Federal Security Agency, Special Health Problems Affecting Manpower.
Joseph W. Mountin, medical director, U. S. Public Health Service, chief, states relations division, Present Status of Federal Legislation and Appropriations.
Stanley B. Freeborn, senior sanitarian, U. S. Public Health Service, The Eradication of Endemic Malaria.
Clifford R. Eskey, medical director in charge, typhus fever control section, The Increasing Importance of Endemic Typhus Fever.
Rolla E. Dyer, assistant surgeon general, U. S. Public Health Service, Exotic Diseases with Which Health Officers May be Concerned.

Features of the program will be a conference with the Children's Bureau with Miss Katharine F. Lenroot, chief of the bureau, presiding as chairman. The theme will be "Aspects of the Maternal and Child Health Program" with Drs. Edwin F. Daily and Sarah S. Deitrick, Washington, D. C., as the speakers. Another conference with the bureau will be presided over by Dr. Martha M. Eliot, associate chief of the bureau, presiding, to discuss the "Crippled Children Program Report." Dr. Abram L. Van Horn, Washington, D. C., will present a report on the "Rheumatic Fever Program."

LATIN AMERICA

Health Activities in Latin America.—The Hospital Insurance Association of Puerto Rico, San Juan, has signed contracts with fifteen hospitals and clinics throughout the island to offer medical services and hospitalization to members of the Blue Cross plan recently established here. The subscriber will pay 75 cents a month per person and $1.50 a family per month as the quota established by the association.

Health Improvements in Puerto Rico.—A program of public health improvements submitted by Dr. Antonio Fernos-Isern, San Juan, commissioner of health, to reduce mortality rates in Puerto Rico includes extension and improvement of sewerage systems for the towns of Arecibo, Adjuntas, Aibonito, Coamo, Guaynabo, Isabela, Moca, Patills, Quebradillas, Guanica, Jayuya, Naranjito, Villalba and Aguas Buenas, also improvements to sewerage systems in twenty-four more municipalities; extension and improvements of water supply systems in urban and rural areas, with an appropriation of $320,000; construction of 10,000 latrines at a cost of $1,200,000; construction of antituberculosis sanatoriums in Arecibo, Aguadilla, Humacao and Cayey; extension to the Antituberculosis Sanatorium in Aibonito, Rio Piedras, Ponce, Mayaguez; extension of the malaria control program with an appropriation of $62,450, and extension of the second unit health systems in the rural areas of Puerto Rico.

FOREIGN

Free Health Service in Great Britain.—A White Paper was presented to Parliament February 17 proposing a comprehensive medical service for all persons, newspapers reported. The proposal seeks to make available for every one advice, treatment and care with the best available facilities regardless of the patient's ability to pay. According to the New York *Times*, this is the first postwar social program outlined by Sir William Beveridge to be developed and it is the first one to attain this stage under the guidance of Lord Woolton, minister of reconstruction. The annual cost to the nation is estimated to be 146 million pounds. The New York *Times* further states that there will be no debate on the scheme until midsummer at the earliest, since the government is eager to gain full reports from the medical profession, local authorities and others affected before drawing up a bill embracing the major proposals. It was stated that the object of the policy set forth in the White Paper is "to bring the country's full resources to bear on reducing ill health and promoting good health in all its citizens. The objectives are:

To insure that every one in the country, irrespective of means, age, sex or occupation, has an equal opportunity to benefit from the best and most up to date medical and allied services available.

To provide, therefore, for all who want it a comprehensive service covering every branch of medical and allied activity from the care of minor ailments to major medicine and surgery; to include the care of mental as well as physical health and all specialist services, for example tuberculosis, cancer, infectious diseases, maternity, fracture and orthopedic treatment.

To divorce care of health from questions of personal means or other factors irrelevent to it; to provide service free of charge and encourage a new attitude toward health—easier obtaining of advice and early promotion of good health rather than only the treatment of bad.

In a statement to the press, Lord Dawson, president of the British Medical Association, said the project was a genuine statesmanlike endeavor to meet an extremely difficult position. The statement continued:

Within its framework of objects and principles much remains to be worked out. There are many points to be clarified as, for example, the experimental character of the health centers, the relationship of the individual family doctor to the hospitals, the mode of appointment and distribution of consultants, the compensation for the loss of capital value in general practices, the machinery by which the public will intimate its desire to avail itself of the service in whole or in part, the future of voluntary hospitals and contributory schemes and, not the least important, the functions of the proposed central medical board.

The *Times* stated that the status of the individual doctor is inviting the widest comment. The *Times* quotes the Manchester *Guardian:* "Not only is the doctor free to take part in the scheme or not—free, if he does take part to practice alone or as a group member—free even to buy and sell public practice, he will also be free to treat for a fee as a private practitioner patients who could claim the same treatment from him without charge." It was stated that the White Paper recognized the necessity of protecting the patients but does not explain how this can be done without insisting that every doctor must choose between public and private practice. In commenting on the reaction of the British Medical Association, it was stated that the association has a real fear of a general clinical instruction being handed down "from on high" and that the medical profession will "fossilize" like civil service. It was stated that a full reply to the government will be made when the 15,000 medical men in the armed forces turn in their questionnaires on the subject.

CORRECTION

Thymectomy for Myasthenia Gravis.—In the current comment with this title in THE JOURNAL for February 26, page 579, appears the statement "This assumption is supported by the frequency of cellular hyperplasia in the thymus in neurasthenia." The word neurasthenia should obviously have been myasthenia.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 12, 1944.

The Artificial Limb Center at Roehampton

The little Surrey village of Roehampton has become famous as the greatest center in Britain for the manufacture and fitting of artificial limbs. The work began in the first world war, when of 41,050 men who lost a limb 26,262 were treated there and supplied with their first and, in many cases, their second limb. After the armistice the institution was extended to accommodate general surgical and medical patients from the Ministry of Pensions Hospital in London and patients with facial wounds from Queen Mary's Hospital, Sidcup, but it still remained primarily for the benefit of men who had lost limbs in war. In this country there are now fourteen centers for limb fitting, and all their surgeons have been trained at Roehampton. Here also most of the progress in design and manufacture has been made. Thanks largely to Roehampton the modern artificial limb is of light and simple construction, permitting leg movements scarcely distinguishable from the natural gait. This highly specialized craft has been so perfected that the time between amputation and return to more or less normal life is greatly reduced. Provision is also made for occupational therapy, with gymnasium and workshops, and for the patient's economic and recreational rehabilitation.

The work has now been extended to amputation patients among civilians, and in the present war many civilians who have lost limbs as a result of German bombs have been treated. Recently a still wider field has been inaugurated. The limb fitting center, with its demonstration theater and consultation rooms, has been extended and the factories have been enlarged. It is proposed further that Roehampton should be a center for teaching the doctors of allied nations, many of whom are in England, the methods of manufacturing and fitting artificial limbs, so that the experience gained at Roehampton may help cripples everywhere.

Improved Vital Statistics

The astonishing fact that vital statistics have improved during the greatest war ever waged by this country has been reported more than once in previous letters to THE JOURNAL. A big increase in births for the quarter ended last September 30 has just been published. A total of 169,348 live births was registered, representing a birth rate of 16.2 per thousand per annum—the highest third quarter since 1930. Also the infant mortality rate—40 per thousand live births—was the lowest quarterly rate ever recorded. During the first nine months of 1943 521,858 live births were registered, compared with 494,171 in the same period of 1942.

In the third quarter there was a substantial fall in the number of marriages. The total of 81,454 was the lowest for any third quarter since 1918, while the rate, 15.6 persons married per thousand of population, was the lowest for any period since 1917. This fall is explained as a consequence of the great increase in the number of marriages which followed the outbreak of war. The death rate for the third quarter was low: 9.4 per thousand of population.

Commenting on these figures the physiologist Sir Leonard Hill says that the record low infant mortality is especially good. He attributes it to the work of advisory clinics and other health services. The birth rate of 16.2 per thousand is not high enough, he stated, though it represents a movement in the right direction. A birth rate of over 19 per thousand is required to maintain our population.

The Future of Pharmacy

At a recent meeting of the Pharmaceutical Society Sir Henry Dale, president of the Royal Society, discussed the effect of new discoveries on the future of pharmacy. Old fashioned dispensing to individual prescriptions would doubtless linger for a time, he said, but it was inevitable that the preparation of remedies required by progressive therapeutics would eventually be entirely by scientific, large scale manufacture. The role of the individual pharmacist would become little more than an intelligent retail distribution of ready made, centrally standardized products, he thought.

Rarely under present conditions of domestic practice could the physician obtain for his patient, or the patient receive through his physician, all that science offered in such growing profusion for the understanding of his illness and its effective treatment, Sir Henry stated. Unless the practitioner was to become a mere "sorting machine" to secure the transfer to hospital of every patient requiring scientific attention, he said, general practice must acquire such an organization that the common laboratory facilities which any modern hospital afforded could be made accessible to any practitioner who knew how to use them. A great number of new laboratory centers with well trained men would then have to be a feature of any adequate scheme, it was pointed out, and the sphere of the pharmacist would be largely transferred from his pharmacy to large laboratories in hospitals.

German Brutality to Russian Prisoners

The *Times* recently reproduced from the Adelaide *Advertiser* the statements of Warrant Officer Ian Sabey, a member of the editorial staff of the *Advertiser*, who was recently repatriated after thirty-two months' imprisonment in Greece, Crete and Germany. He stated that British prisoners in Germany have been witnesses of the greatest cruelties and sadistic treatment of Russian prisoners. When the time comes for British prisoners to make charges, even their horrible experiences pale into insignificance beside those of the tortured and starved Russians whose bodies lie in great pits around their prison camps. In October 1941 Sabey was in an Austrian camp, where he saw the arrival of the first consignment of Russians when the temperature was almost at the freezing point. At the sight a long, low cry of rage swept up from the French prisoners' quarters, and next came angry cries from the British. The Russians were so emaciated that they seemed more like animals than human beings, and many who were unable to walk were supported by others. The British prisoners were so sickened that their attitude became ominous, and guards chased them into their huts. When the Russians were stripped for a shower bath their bones were almost sticking through their infested skins. The guards used whips and kicked and manhandled them.

The British, who had been refused permission to help the Russians, now pushed the guards aside and removed the seriously ill and the dead on stretchers. The corpses were so light from starvation that three could be placed on a single stretcher. A Russian told Sabey that the party traveled for six weeks through Germany without being able to leave the cattle trucks in which they were herded. Of 1,200 on the train, 300 died. An English medical officer, Capt. A. Webster, whom the Germans sent to attend the Russians, made the heroic decision of remaining with them voluntarily when his time was up. A team of Australians, New Zealanders and English medical orderlies voluntarily worked under him.

Penicillin Expert to Help Russia

Professor H. W. Florey, famous for his work on penicillin, has gone to Russia to pass on his knowledge to Soviet surgeons. He recently directed the use of penicillin for the treatment of wounds in the Middle East and has presented a report thereon to the Medical Research Council and the War Office.

BRAZIL

(From Our Regular Correspondent)

Feb. 6, 1944.

Vital Statistics of Rio de Janeiro for 1943

Provisional vital statistics for the city of Rio de Janeiro for the year 1943 are now available and may be compared with the figures for 1941 and 1942 (THE JOURNAL, May 2, 1942, p. 96; April 10, 1943, p. 1238). The population of the city as of July 1, 1943 was 1,890,000. The total number of deaths from all causes was 32,694, giving an annual death rate of 17.30 per thousand of population, which is just below the rate for the previous year (17.54). Practically, there has been no change in the death rate during the last twelve years, after a constant and regular decline since the beginning of the century. From 25 per thousand for the period 1902-1906 the mortality followed a descending trend to 17.88 for the period 1927-1931. The number of live births registered in 1943 was 41,728, representing an annual birth rate of 22.10 per thousand of population, a continued improvement over the previous two years (19.28 per thousand for 1941 and 21.16 per thousand for 1942). The infant mortality rate was 146 per thousand live births, an improvement over 1941 (180 per thousand live births) and 1942 (153 per thousand live births). This decline in the infant mortality rate is mainly due to the increase in the number of births registered, which may be accounted for, in part at least, by efforts to better birth registration. The fetal mortality was 74.17 per thousand total births, a figure showing practically no change in comparison with the last few years. This is accepted by Brazilian sanitarians principally as a result of the still high prevalence of syphilis in the population. The number of deaths from causes related to pregnancy, childbirth and the puerperium was 264, corresponding to a maternal death rate of 6.33 deaths per thousand live births (7.75 in 1942).

The most important cause of death was tuberculosis, with a total of 6,157 deaths (5,989 from tuberculosis of the respiratory system), or 18.83 per cent of the number of deaths from all causes. The tuberculosis death rate of 325 per hundred thousand of population may be compared with a rate of 345 per hundred thousand in the period 1922-1926, 327 in 1927-1931, 315 in 1932-1936 and 327 in 1937-1941. Tuberculosis is still the greatest health problem in Rio de Janeiro. The rest of the "infectious and parasitic diseases" caused 10,295 deaths (31.49 per cent of deaths from all causes), an annual death rate of 545 per hundred thousand, as against about 100 per hundred thousand for the average of the largest cities of the United States. Of this total, 109 deaths were caused by typhoid, an annual death rate of 5.77 per hundred thousand (7.17 in 1941, 6.26 in 1942 and 7.10 in the period 1937-1941). The other principal infections were dysentery (mainly bacillary), measles, whooping cough, diphtheria, malaria, influenza, leprosy, epidemic meningitis, epidemic encephalitis, poliomyelitis and tetanus (about 50 per cent umbilical). Cancer, which caused 1,362 deaths, or 72.06 per hundred thousand (66.44 in 1942, and 67.34 in 1937-1941), has increased steadily as a cause of death since 1903-1907, when the mean annual death rate was 34.75.

The second most important group of causes of death is diseases of the digestive system, represented by 5,371 deaths, or 16.43 per cent of the deaths from all causes, which corresponds to a rate of 284 per hundred thousand of population (275 in 1941 and 277 in 1942). A majority (3,468) of these deaths were listed as "diarrhea and enteritis under 2 years"—the greatest contribution to infant mortality. An average of 38 per cent of the deaths in the age group 0-1 year in Rio de Janeiro is classified as due to diarrheal diseases. The number of deaths caused by appendicitis was 95 and the number caused by diseases of the liver and the biliary ducts was 481, corresponding respectively to 5.03 and 25.45 per hundred thousand. The third leading group of causes of death was diseases of the circulatory system, represented by a total of 5,116 deaths, or 271 per hundred thousand. Of this total, 4,084 deaths were caused by diseases of the heart, a rate of 216 per hundred thousand. The annual death rate from diseases of the cardiovascular system was increased in Rio de Janeiro from 173 per hundred thousand for the period 1926-1930 to 308 in 1941 and 308 in 1942. In 1943, however, the rate decreased, perhaps because of the important changes in the latest revision of the International List of Causes of Death, now in full use.

Diseases of the nervous system caused 1,236 deaths, or 65.40 per hundred thousand, the largest contribution being from "intracranial lesions of vascular origin" (877 deaths, or 46.40 per hundred thousand). The number of deaths registered as caused by diseases of the respiratory system was 4,039, a rate of 214 per hundred thousand. Diseases of the genitourinary system caused 1,689 deaths, or 89.37 per hundred thousand. Of this total, the deaths due to acute and chronic nephritis were 1,286, or 68.04 per hundred thousand. Puerperal septicemia and infection was the cause of 94 deaths, or 35.61 per cent of the maternal deaths (1 death in 444 live births as against 1 in 282 in 1941 and 1 in 321 in 1942). Violent deaths were 1,071, or 3.27 per cent of the total of deaths from all causes, which corresponds to a rate of 56.67 per hundred thousand (66.46 in 1941 and 65.51 in 1942). Of this total, 235 deaths were due to motor vehicle accidents, or 12.43 per hundred thousand (17.92 in 1941 and 10.68 in 1942).

Brief Items

Dr. João Marinho, professor of otorhinolaryngology at the University of Rio de Janeiro and distinguished practitioner of the specialty, has been elected a member of the Academy of Medicine of Buenos Aires, Argentina.

Dr. Alvaro Pontes, associate professor of surgery at the University of Rio de Janeiro, left for London recently at the invitation of the British Ministry of Health to study special problems of war surgery.

The University of Rio de Janeiro is now giving four special summer medical courses on the semeiology of the diseases of the nervous system, heredity in medicine, diseases of the extrapyramidal nervous system and syphilis of the nervous system. Drs. A. Borges Fortes, Helion Povoa, A. Morais Austregesilo and Aloysio Marques respectively are in charge of these courses.

The Brazilian Temperance League promoted an "antialcohol week," during which several leading physicians and educators held special meeting and delivered lectures in schools, clinics, hospitals, factories and military posts. The opening address was delivered over the radio by Dr. Henrique Roxo, director of the Psychiatric Institute of the University of Rio de Janeiro and president of the Brazilian League of Mental Hygiene.

Marriages

PAUL STAHL MERTINS JR., Montgomery, Ala., to Miss Anne Moss of Birmingham at Del Rio, Texas, February 12.

JOHN W. CATHCART, Winnsboro, S. C., to Miss Margaret Virginia Caughman of Columbia, February 21.

EDWARD BUIST WELLS, Nashville, Tenn., to Miss Rosemary Lamprakes of Rochester, N. Y., February 19.

WILLIAM HUGH HALL to Miss Rosemary Patricia Dickinson, both of Charleston, S. C., February 22.

HARRY VINCENT HANLEY, Brooklyn, to Miss Marie Joan Gallagher of Goshen, N. Y., January 30.

BRUCE A. HARRIS JR., Brooklyn, to Miss Joan Leigh Maddy in Dallas, Texas, February 21.

JAMES J. BAYER, Perrysburg, Ohio, to Miss Evelyn Maxine Orians of Carey, February 19.

ARTHUR E. SCHULTZ, Detroit, to Miss Betty Ann Kralik of Cleveland, December 11.

JOHN WILLIAM ROSE to Miss Pauline Mims, both of Birmingham, Ala., recently.

Deaths

Frederic William Schlutz ✠ noted pediatrician, died in the Albert Merritt Billings Hospital, Chicago, March 8, aged 63, of decompensation due to heart disease.

Dr. Schlutz was born in Greene, Iowa, Nov. 10, 1880. He studied at Wartburg College, Clinton, Iowa, and graduated at the University of Maryland School of Medicine, Baltimore, in 1902. Subsequently he studied in Berlin, Strassburg, Kiel, London, Paris and at Harvard. He joined the faculty of the University of Minnesota Medical School, Minneapolis, in 1910, serving until 1912 as instructor in biochemistry. He then started teaching pediatrics, serving as instructor, assistant professor and professor and head of the department. He also was professor of pediatrics at the Graduate School at Minnesota. It was during this period that he founded the Minneapolis Infant Welfare Society. In 1930 he was named to the faculty of the University of Chicago School of Medicine as professor and head of the department of pediatrics, serving also as chairman of the Bobs Roberts Memorial Hospital for Children. The following year he was named the first Richard T. Crane professor of pediatrics.

Certified by the American Board of Pediatrics, Dr. Schlutz was a member of the American Pediatric Society, American Academy of Pediatrics, Society for Pediatric Research, American Biochemical Society for Experimental Biology and Medicine, American Society of Biological Chemists, American Institute of Nutrition, Society for Research in Child Development, Institute of Medicine of Chicago and the Minnesota Academy of Medicine. He was an honorary member of the National Academy of Medicine of the Republic of Argentina and of the pediatric societies of Mexico, Uruguay, Paraguay, Argentina, Colombia, Peru and Cuba. He was United States delegate in a number of Pan American child hygiene congresses between 1928 and 1942 and this year was to serve similarly at the second pediatric congress in Mexico. He had been a member of the executive committee of the Pan American Union. At the time of his death he was preparing to leave for an eighteen weeks good will mission in Latin America for the U. S. Department of State. He was a committee member of the White House Conference on Child Health in 1929-1930.

Dr. Schlutz was assistant medical chief in charge of contagious diseases at the Base Hospital, 12th Division, Camp Devens, in 1918. He had written numerous articles dealing with his specialty, independently and in collaboration with others, and concluding his year as chairman of the Section on Diseases of Children of the American Medical Association, 1932-1933, he wrote a review of the section covering the first fifty years of its development.

Randle Crater Rosenberger ✠ Rahns, Pa.; Jefferson Medical College of Philadelphia, 1894; in 1894 assistant in outpatient department diseases of children and assistant demonstrator of histology at his alma mater, where he was from 1895 to 1898 assistant demonstrator of normal and pathologic histology and assistant in diseases of the heart and lungs, in 1898-1899 demonstrator of normal histology and bacteriology, in 1900 demonstrator of bacteriology, in 1902 associate in bacteriology, from 1904 to 1908 assistant professor in bacteriology and from 1909 to 1924 professor of hygiene and bacteriology, serving concurrently during most of this period as curator of the museum; from 1924 to 1941 professor of preventive medicine and bacteriology and since the latter date professor of immunology and bacteriology; in 1941 served as acting dean of the college; lecturer on hygiene at the Woman's Medical College of Pennsylvania; member of the Society of American Bacteriologists, the College of Physicians of Philadelphia and the Philadelphia Pathological Society; in 1910 member of the Milk Commission of Philadelphia and in 1916 the Pneumonia Commission of Philadelphia; served as assistant pathologist and director of the clinical laboratory at the Philadelphia General Hospital, pathologist to St. Joseph's Hospital and associate in bacteriology and pathologist to the Henry Phipps Institute; died February 21, aged 70, of myeloblastic leukemia.

Albert Franklin Tyler ✠ Omaha; John A. Creighton Medical College, Omaha, 1907; formerly professor of roentgenology and physical therapy at the Creighton University School of Medicine; president of the Omaha-Douglas County Medical Society in 1918, the Omaha Roentgen Society from 1918 to 1920 and the Radiological Society of North America in 1920; a founder of the American College of Physical Therapy, later known as the American Congress of Physical Therapy, of which he was president in 1933; received the gold key award of the society in 1932; member of the American Roentgen Ray Society, secretary of the central section from 1916 to 1918; member of the American Radium Society, Omaha Mid-West Clinical Society, British Roentgen Society and the Nebraska Radiological Society; fellow of the American College of Physicians; specialist certified by the American Board of Radiology, Inc.; for many years on the staffs of the Immanuel Deaconess Institute and Creighton St. Joseph's Hospital; author of "Roentgenotherapy" and editor of "History of Medicine in Nebraska"; for many years publisher and managing editor of the *Journal of Radiology*, later known as the *Archives of Physical Therapy;* associate editor of the *Nebraska State Medical Journal* from 1917 to 1919; a trustee of the Nebraska Wesleyan University; died February 25, aged 62.

Adolph O. Pfingst ✠ Louisville, Ky.; Louisville Medical College, 1891; M.D., University of Berlin, 1894; in 1895 became assistant to Prof. Herman Knapp and house surgeon to the New York Ophthalmic Institute; professor emeritus of ophthalmology at the University of Louisville School of Medicine, where he had been professor of physiology, histology and bacteriology and professor of ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society, International Society of Ophthalmology and the Pan American Congress of Ophthalmology; past president of the Kentucky State Ophthalmological Society and the Louisville Eye and Ear Society; fellow of the American College of Surgeons; director of the department of ophthalmology at the Louisville City Hospital from 1909 to 1930; member of the medical staffs of St. Joseph Infirmary, Norton Memorial Infirmary and Children's Free Hospital and the Kosair Crippled Children Hospital; member of the volunteer corps during World War I; author of "Textbook on Bacteriology" in 1898; served as associate editor of the *Kentucky State Medical Journal;* died February 25, aged 74, of coronary occlusion.

John van de Erve, Charleston, S. C.; Rush Medical College, Chicago, 1911; member of the South Carolina Medical Association and the South Carolina Academy of Science; professor emeritus of physiology at the Medical College of the State of South Carolina, where he had been professor of physiology since 1919 and for many years head of the department; chairman of the committee on buildings and grounds and member of the committee on curriculum at the college; formerly associate dean, professor and director of the department of physiology at the Marquette University School of Medicine, Milwaukee, and professor of physiology at the University of Alabama School of Medicine, Mobile; equipped and developed laboratories of physiology in Mobile, Milwaukee and Charleston; designed the building for physiology and pharmacology at Charleston; served as a lieutenant (jg) chaplain in the navy during World War I; also a Presbyterian minister; served as consul for the Netherlands; died February 15, aged 73, of coronary occlusion.

Sam Brock ✠ Chicago; Johns Hopkins University School of Medicine, Baltimore, 1916; fellow of the American College of Surgeons; entered the Mayo Foundation, Rochester, Minn., as a fellow in surgery on July 1, 1919 and left the foundation in 1922; at one time associate in surgery, clinical assistant in surgery and instructor in surgery at the Northwestern University Medical School; formerly professor of surgery at the University of Georgia School of Medicine, Augusta; served as a major with the American Expeditionary Forces from 1917 to 1919, stationed at Base Hospital number 4; began active duty as a major in the medical corps, Army of the United States, in June 1942 and served for eighteen months in New Guinea during World War II; honorably discharged Sept. 29, 1943 because of ill health; on the staffs of the Passavant Memorial, Wesley Memorial and Edgewater hospitals; died in Rochester, Minn., February 11, aged 55.

Beveridge Harshaw Moore ✠ Chicago; Rush Medical College, Chicago, 1912; associate professor of bone and joint surgery at the Northwestern University Medical School; specialist certified by the American Board of Orthopaedic Surgery, Inc.; member of the American Orthopaedic Association, the American Academy of Orthopaedic Surgeons, Chicago Orthopedic Club, Institute of Medicine of Chicago, Chicago Literary Club and the American Association for the Advancement of Science; acting president of the Chicago Orthopedic Society; a member of the committee on after-care and study of infantile paralysis, Visiting Nurse Association of Chicago; a major in the medical corps of the U. S. Army during World War I; chief surgeon, Shriners' Hospital for Crippled Children; served as attending orthopedic surgeon at the Cook County and Children's Memorial hospitals; died February 29, aged 62, of coronary thrombosis.

William Byrdwill Peters, Appalachia, Va.; Hospital College of Medicine, Louisville, Ky., 1907; member of the Medical Society of Virginia; past president of the Wise County Medical Society; served during World War I; for many years medical director of the Appalachia Masonic Hospital; past president of the local chamber of commerce; director of the Portsmouth Navy Yard Clinic, Norfolk; for the past year served as chief surgeon of the Holston Ordnance Works at Kingsport, Tenn.; died in the Johns Hopkins Hospital, Baltimore, January 9, aged 61, of myocardial failure.

William Helweg Guillium ✠ Asbury Park, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1920; specialist certified by the American Board of Radiology, Inc.; member of the American College of Radiology; served as assistant roentgenologist, New York Post-Graduate Medical School and Hospital, Columbia University, and clinical assistant roentgenologist, New York Post-Graduate Medical School and Hospital, New York; on the staff of the Point Pleasant Hospital, Point Pleasant; died January 19, aged 59, of cerebral hemorrhage.

Leon Chappelle Agee, Whistler, Ala.; Harvard Medical School, Boston, 1943; an intern at the Jefferson Hospital, Roanoke, Va., where he died January 10, aged 22, of an enlarged thymus.

Francis Vernon Atkinson ✠ Washington, D. C.; George Washington University School of Medicine, Washington, 1915; died December 27, aged 69.

Mark N. Brooks, Springville, N. Y.; University of Buffalo School of Medicine, 1884; member of the Medical Society of the State of New York; died December 23, aged 82, of lobar pneumonia and general arteriosclerosis.

Guglielmo Cataldi, St. Louis; Regia Università degli Studi di Palermo Facoltà di Medicina e Chirurgia, Italy, 1897; died January 11, aged 72, of cerebral hemorrhage.

John Wyman Dean, Glens Falls, N. Y.; Albany (N. Y.) Medical College, 1897; member of the Medical Society of the State of New York; died December 18, aged 75, of endocarditis, influenza, myocarditis and arteriosclerosis.

David Derow, New York; Columbia University College of Physicians and Surgeons, New York, 1905; member of the Medical Society of the State of New York; on the staff of Beth Israel Hospital; died in the Mount Sinai Hospital December 25, aged 63, of bronchopneumonia.

Louis Phillip Dosh ✠ Elmsford, N. Y.; Cornell University Medical College, New York, 1903; head of the civilian defense medical services in Elmsford; for many years on the staff of the Tarrytown Hospital, Tarrytown, where he died, January 16, aged 63, of adenocarcinoma of the urinary bladder.

George S. Durbin ✠ Erie, Pa.; Jefferson Medical College of Philadelphia, 1918; on the staff of St. Vincent's Hospital; died December 25, aged 49, of cerebral hemorrhage.

Galen Lamar Eads, Marshall, Texas; Southern Methodist University Medical Department, Dallas, 1913; member of the State Medical Association of Texas; health officer of Harrison County and served as chairman of the county board of health; served during World War I; died December 26, aged 51, of injuries received in an automobile accident.

George Hurlburt Felton, Berea, Ky.; University of the City of New York Medical Department, New York, 1878; oldest alumnus of the Brown University, Providence, R. I.; at one time professor of natural science and mathematics and acting president at the Leland University in New Orleans and professor of materia medica in the Medical Department of New Orleans University; died in the Berea College Hospital December 7, aged 97, of chronic myocarditis.

Aline Fox, New York; Columbia University College of Physicians and Surgeons, New York, 1943; died December 6, aged 25, of an overdose of sedative.

Claud Frank Gilbert, Corinth, Miss.; University of Tennessee College of Medicine, Memphis, 1914; on the staff of Corinth Hospital; died January 19, aged 53, of carcinoma of the right arm and axilla.

James Treat Gorton, Yonkers, N. Y.; Cornell University Medical College, New York, 1900; member of the Medical Society of the State of New York; for many years medical director of the Otis Elevator Company; emeritus surgeon on the staff of St. John's Riverside Hospital, where he died January 23, aged 67, of carcinoma of the bladder.

Herman E. Hayd ✠ Buffalo; McGill University Faculty of Medicine, Montreal, Que., Canada, 1881; an Affiliate Fellow of the American Medical Association; fellow of the American College of Surgeons; past vice president, president and treasurer of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; consulting surgeon, Deaconess and Memorial hospitals; formerly gynecologist at the Erie County Hospital; died February 18, aged 85, of myocarditis.

William W. Heberton, Avon, N. Y.; New York Homeopathic Medical College, New York, 1885; died December 29, aged 80, of coronary occlusion, angina pectoris and arteriosclerotic heart disease.

Edward Almond Hoffman, Turtle Creek, Pa.; Jefferson Medical College of Philadelphia, 1896; died in the Woodville State Hospital January 16, aged 70, of chronic myocarditis.

Isaiah Louis Hoffman, Brooklyn; Cornell University Medical College, New York, 1899; died December 31, aged 64, of coronary thrombosis, arteriosclerosis and hypertension.

Charles Henry Hunt, Portland, Maine; Medical School of Maine, Portland, 1905; member of the Maine Medical Association; fellow of the American College of Surgeons; chairman of the civilian defense medical unit; visiting surgeon, Maine General Hospital; district surgeon, Canadian National Railways; died suddenly January 27, aged 63, of coronary thrombosis.

Edward Worthington Jackson, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; veteran of the Spanish-American War; during World War I served with the secret service; served on the medical staff of the Commonwealth Edison Company; for many years on the staff of the Norwegian American Hospital; died in the Veterans Administration Facility, Hines, Ill., January 30, aged 67, of coronary arteriosclerotic heart disease with angina pectoris.

John Warren James, Dover, Del.; Jefferson Medical College of Philadelphia, 1895; president of the Medical Society of Delaware in 1922; served on the staff of the Kent General Hospital; died in Fort Lauderdale, Fla., December 13, aged 70, of coronary occlusion.

Alexander M. Kan ✠ Gary, Ind.; Illinois Medical College, Chicago, 1906; served during World War I; captain, medical reserve corps, U. S. Army, not on active duty; on the staff of St. Mary's Mercy Hospital, where he died January 31, aged 61, of carcinoma of the urinary bladder and prostate.

Charles Stephen Kennedy, Logan, Iowa; John A. Creighton Medical College, Omaha, 1902; member of the Iowa State Medical Society; also a pharmacist; past president of the Harrison County Medical Society; served during World War I; adviser to the Harrison County Insanity Commission and medical officer for the Selective Service; died January 13, aged 75, of heart disease.

Philip A. Kennicott, Hagerman, Idaho; College of Physicians and Surgeons of Chicago, 1889; died in Twin Falls January 11, aged 79, of carcinoma of the kidney.

John Joseph Kerrigan, Fall River, Mass.; College of Physicians and Surgeons, Baltimore, 1906; member of the New England Otological and Laryngological Society; a member of the school board and formerly a member of the board of health; served on the staffs of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary, Boston, and St. Anne's, Union and Fall River General hospitals; died January 6, aged 65, of pulmonary embolism and chronic myocarditis.

James Washington King, Averill Park, N. Y.; Albany Medical College, 1884; at one time health officer of Stockport; died January 11, aged 87, of cerebral hemorrhage and general arteriosclerosis.

Louis Anatole LaGarde ✠ Lieutenant Colonel, U. S. Army, retired, San Francisco; George Washington University School of Medicine, Washington, D. C., 1912; Army Medical School, 1917; entered the medical corps of the U. S. Army as a first lieutenant on Dec. 18, 1917; promoted as a captain on Nov. 24, 1918, major April 6, 1929 and a lieutenant colonel on April 6, 1937; later retired; served during World War I; a physical examiner for the United Air Lines; died in Stockton December 2, aged 58.

Sidney Locock Lasell, Pasadena, Calif.; Columbia University College of Physicians and Surgeons, New York, 1896; for many years a medical missionary in China; died January 20, aged 73, of coronary occlusion.

Georgianna Strunk Loffredo, Jamestown, N. Y.; Eclectic Medical College of the City of New York, 1906; died December 27, aged 85, of general arteriosclerosis.

William Rodman Manning, Fillmore, Calif.; University of Southern California College of Medicine, Los Angeles, 1902; member of the California Medical Association; formerly health officer; served on the staff of the Foster Memorial Hospital, Ventura; died January 10, aged 68, of cerebral hemorrhage.

Edward George Marks, Kearny, N. J.; University of the City of New York Medical Department, 1894; member of the Medical Society of New Jersey; past president of the Academy of Medicine of Northern New Jersey; on the staff of the Presbyterian Hospital, Newark; died in the West Hudson Hospital January 16, aged 85, of arteriosclerotic heart disease.

Leon R. McCrummen, La Grange, Ga.; Atlanta College of Physicians and Surgeons, 1909; member of the Medical Association of Georgia; served as city physician; died January 15, aged 64, of heart disease.

Francis Humphrey Merrick ✠ Boston; Boston University School of Medicine, 1933; assistant physician of the Boston College football team; served on the staffs of the Boston City and St. Elizabeth's hospitals; died in the Evans Memorial Hospital January 17, aged 37, of perforated ulcer and peritonitis.

Ephraim B. Miller, Fountaintown, Ind.; Medical College of Indiana, Indianapolis, 1897; died in the Methodist Hospital, Indianapolis, January 16, aged 78, of myelogenous leukemia.

Herbert Lee Montague, St. Louis; Washington University School of Medicine, St. Louis, 1896; a captain in the U. S. Army during World War I; died in the Veterans Administration Facility, Jefferson Barracks, Mo., January 9, aged 73, of cerebral thrombosis and generalized arteriosclerosis.

John Stephan Nagel ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; past president of the Chicago Medical Society; councilor of the Third District of the Illinois State Medical Society; formerly professor of genitourinary surgery at the Illinois Postgraduate Medical School; dean and professor of genitourinary diseases at the Chicago College of Medicine and Surgery; specialist certified by the American Board of Urology, Inc.; attending surgeon, Garfield Park Community Hospital; died March 2, aged 70, of coronary thrombosis.

Major Joseph B. Coopwood, U. S. Army, 1907-1943

Lieut. Edwin J. Welte, U. S. Naval Reserve, 1913-1943

Daniel W. O'Brien ✠ Brooklyn; Loyola University School of Medicine, Chicago, 1925; served on the staffs of the Hospital of the Holy Family, St. Mary's Hospital, Bay Ridge Hospital, Victory Memorial Hospital and the Kings County Hospital, where he died January 24, aged 55, of acute coronary thrombosis and arteriosclerotic heart disease.

Simeon Anatol Oleynick ✠ Elizabeth, N. J.; Albertus-Universität Medizinische Fakultät, Königsberg, Prussia, Germany, 1910; specialist certified by the American Board of Dermatology and Syphilology; served on the staffs of the Alexian Brothers Hospital, Elizabeth General Hospital and St. Elizabeth Hospital, Elizabeth, St. Michael's and Beth Israel hospitals in Newark; died January 17, aged 57, of carcinoma of the rectum with metastasis to the liver.

Clarendon Etheredge Oxner, West Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1928; member of the South Carolina Medical Association; died in the South Carolina Baptist Hospital, Columbia, January 7, aged 43, of acute nephritis.

Warren Ellis Page, Cranston, R. I.; Dartmouth Medical School, Hanover, N. H., 1881; served as health officer and medical inspector of schools; died January 8, aged 85, of pneumonia.

William Pfannebecker ✠ Sigourney, Iowa; Missouri Medical College, St. Louis, 1891; member of the American Association of Railway Surgeons; examiner for many life insurance companies; died in the University Hospital, Iowa City, January 8, aged 80, of chronic prostatitis and uremia.

Eugene Adelbert Pond, Kansas City, Mo.; University Medical College of Kansas City, 1910; member of the Missouri State Medical Association; for many years physician for the Kansas City Stockyards Company and Commonwealth Aircraft, Inc.; formerly on the staff of Emergency Hospital, on the staffs of the St. Luke's Hospital, Trinity Lutheran Hospital and the Research Hospital, where he died January 10, aged 64, of pneumonia.

Louis Henri Renaud, Pawtucket, R. I.; School of Medicine and Surgery of Montreal, Que., Canada, 1904; died January 4, aged 63, of hypertensive cardiovascular renal disease, cardiac failure, uremia and hypertension.

Herbert Lowell Rich ✠ Attleboro, Mass.; Tufts College Medical School, Boston, 1898; died in the Sturdy Memorial Hospital January 23, aged 78, of congestive heart disease.

Pettis Madison Richardson ✠ Cushing, Okla.; Gate City Medical College, Texarkana, Ark., 1907; at one time associated with the Indian Service; city health officer; on the staff of the Masonic Hospital; died January 10, aged 65, of injuries received when the automobile in which he was driving was struck by a train.

Francis M. Roseberry, Keokuk, Iowa; College of Physicians and Surgeons, Keokuk, 1897; veteran of the Spanish-American War; died in the Graham Protestant Hospital January 6, aged 76, of cerebral hemorrhage.

Thomas Henry Shorb, Canton, Ohio; Ohio Medical University, Columbus, 1903; a captain in the medical corps of the U. S. Army during World War I; a member of the Canton Medical Library Association; at one time member of the city council and county coroner; served on the staff of the Aultman Hospital; died December 16, aged 68, of coronary occlusion.

Erra Delafield Stump, Charleston, W. Va.; Medical College of Ohio, Cincinnati, 1908; died March 1, aged 59, of cerebral hemorrhage.

Frank Lee Van Alstine ✠ Jackson, Miss.; Hospital College of Medicine, Louisville, Ky., 1904; on the staff of the Mississippi Baptist Hospital; at one time on the staff of the U. S. Marine Hospital, number 14, New Orleans; died January 2, aged 66.

Cecil Hendry Wilson ✠ Bartow, Fla.; Atlanta College of Physicians and Surgeons, 1913; died December 18, aged 55, of carcinoma of the colon.

KILLED IN ACTION

Joseph Bennett Coopwood, Lockhart, Texas; Baylor University College of Medicine, Dallas, 1930; member of the State Medical Association of Texas; commissioned a captain in the U. S. Army (National Guard); extended active duty began Nov. 25, 1940 with the medical detachment, 141st Infantry, at Camp Bowie; later promoted to a major; killed in action in the North African area Nov. 21, 1943, aged 36.

Edwin Joseph Welte, Crookston, Minn.; University of Minnesota Medical School, Minneapolis, 1938; formerly fellow in surgery at the Minneapolis General Hospital; began active duty as a lieutenant (jg), medical corps, U. S. Naval Reserve, July 28, 1941 and later promoted to a lieutenant; killed in the battle of Tarawa in the Gilbert Islands when shell fire struck a landing boat, Nov. 20, 1943, aged 30.

Correspondence

FLUORIDE AND DENTAL CARIES

To the Editor:—Anent your stimulating editorial on fluoride and dental caries, together with the correspondence which it elicited in your issue of February 12, it seems that a geographic survey of disease in this country is much in order. For instance, are there other localities like Deaf Smith County, Texas, where dental caries is far below the average? And, conversely, in what districts do people have the poorest teeth? Even in Maryland, examination of army selectees has shown that those who come from the Eastern Shore have far better teeth than those who come from the western mountainous counties. And why stop with a consideration of teeth? There is a small region about 20 miles south of Rochester, N. Y., where the incidence of renal stones is high. A geologist called my attention to this condition and mentioned parenthetically that there was much gypsum in that area. The other side of this picture is represented by those localities that derive their drinking water from the Savannah River; gallstones and kidney stones are rare in those towns. Maine has been shown to have the highest incidence of cancer. Obviously there must be places in this country where the incidence of disease is less than in other places, and once such areas have been recognized the other problem, namely the economic problem of taking care of people who might gravitate to such regions in order to benefit from the natural advantages, may present itself for solution. But, first of all, why not have a geographic health survey to find out where any particular disease is common or rare? Such knowledge may be an important factor in helping to determine the cause and possible cure of that disease.

FERDINAND C. LEE, M.D., Baltimore.

STUDY OF INFANT DEATHS

To the Editor:—I have been interested in reading Dr. Edith L. Potter's article on "The Lessons to Be Learned from a Study of Infant Deaths" appearing in THE JOURNAL, February 5. The analysis of the causes of early infant deaths is illuminating, as is the account of the praiseworthy steps taken in Chicago to ameliorate these conditions.

In illustrating statistically the progress made in Chicago, however, I do raise the question of using the rates in the country as a whole as a background for comparison. Would it not be much more convincing to compare Chicago's position with other large cities—Detroit, New York, Cleveland, Philadelphia and others? When comparisons are made with the country as a whole, the cards are stacked against the smaller cities and the rural areas primarily because of lack of resources and facilities, the lesser opportunities for attracting professional skills and economic inability to take full advantage of the facilities that do exist.

Is it realistic to say that "what has been accomplished in this city can be accomplished anywhere if a sufficient number of people have a great enough desire." Is it just desire that is lacking, or is it in no small degree the wherewithal to satisfy that desire?

I am thinking of a rural county with low tax ratability, 40,000 people and four doctors. How can they expect to provide good or adequate antepartum and obstetrical care? It isn't lack of desire. It is lack of ability to solve satisfactorily an array of tremendously difficult problems. Can the desire be realized until some power with greater ability than that of the county in question comes to improve the economic resources of the inhabitants?

Without in the slightest belittling the progress in Chicago, a comparison with the large cities would provide a better measuring stick. Chicago's infant mortality rate of 28.4 in 1942 is not greatly different from New York City's figure for that year, namely 28.8.

MARIE NYSWANDER, A.B.,
Cornell University Medical College,
New York 21.

ABBREVIATIONS IN PRESCRIPTION WRITING

To the Editor:—Will you give me the hospitality of space for a few words on the opinion expressed by your reviewer of L. C. Smith's "A Workbook of Elementary Pharmacology and Therapeutics" in your issue of Oct. 30, 1943?

I quite agree that abbreviations ought never to be used in prescriptions. They are a sign of laziness of spirit unworthy of a physician. I do not agree, however, when your reviewer says that Latin should not be used. Latin can be considered a universal language of pharmacology; its general use will do much for the necessary international application of medicine. Latin and the decimal system are the real expression of sound pharmacologic knowledge. As for the sentence "If they are Latin scholars it usually is at the expense of less knowledge of medicine and pharmacology" may I remind your reviewer of Mark Twain's lines "If your doctor know only medicine, you may be sure he does not know even medicine"?

Those physicians who know Greek and Latin and cultivate them, far from doing so at the expense of medical knowledge, improve, on the contrary, their medical skill by the clarity of logical thinking and the synthetic and intuitive approach to the patient which only a classical education gives.

A. P. CAWADIAS, M.D., F.R.C.P.,
50 Wimpole Street, London, W. 1.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, March 11, page 732.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Oct. 24-26. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARIZONA:* Phoenix, April 4-5. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS:* March. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, June 8. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: San Francisco, June 27-29 Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento.

COLORADO:* Denver, April 4-7. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

CONNECTICUT:* *Endorsement.* New Haven, March 28. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DISTRICT OF COLUMBIA:* *Reciprocity.* Washington, March. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA:* Jacksonville, June 26-27. Sec., Dr. W. M. Rowlett, Box 786, Tampa.

ILLINOIS: Chicago, April 4-6. Supt. of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, May 2-4. Sec., Board of Medical Registration and Examination, Dr. W. C. Moore, 301 State House, Indianapolis.

KENTUCKY: Louisville, Sept. 11-12. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville.

MARYLAND: *Medical.* Baltimore, June 13-16. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 20-21. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MINNESOTA:* Minneapolis, April 18-20. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul.

MISSOURI: St. Louis, August. Sec., State Board of Health, Dr. James Stewart, State Capitol Bldg., Jefferson City.

MONTANA: Helena, April 3-5. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEW MEXICO: * Santa Fe, April 10-11. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York City and Syracuse, June 26-29. Sec., Dr. R. R. Hannon, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 5-8. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* Columbus, April 4. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * *Endorsement.* Portland, April 22. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

RHODE ISLAND: * Providence, April 6-7. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 26-28. Sec., Dr. N. B. Heyward, 1329 Blandena St., Columbia.

TEXAS: Houston, March 22-24. Final date for filing application is March 10. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas.

WEST VIRGINIA: Charleston, May 1-3. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston.

WISCONSIN: * Milwaukee, June 27-29. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: Washington, April 17-18. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: Gainesville, June 8. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 11. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, May 12-13. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 4-5. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: Omaha, May 2-3. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

SOUTH DAKOTA: Vermillion, June 4-5. Sec., Dr. G. M. Evans, Yankton.

WISCONSIN: Madison, April 1. Sec., Prof. R. N. Bauer, 152 W. Wisconsin Ave., Milwaukee.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Schools: Right to Expel Students Stealing and Selling Examination Questions: Necessity of Hearing Before Expulsion.—Questions of the examinations to be given in the College of Medicine of the University of Tennessee were stolen during the fore part of 1940 and were sold to students taking the examinations in question. The appropriate university authorities organized a student council, consisting of the Dean of the College of Medicine and twelve students, to investigate the situation and to make recommendations to the faculty. The council obtained evidence in the nature of statements from students connecting Sherman and Avakian, students in the College of Medicine, with the theft and sale of the questions, and the two students were called before the council. Both denied their guilt, but the council recommended their dismissal from the university. The two students were notified by the Dean of the College of Medicine to meet with the faculty executive committee on a certain day. Sherman refused to attend the meeting "because of business engagements." The committee expelled the two students from the university. Later Sherman asked for a rehearing, which was granted. At the rehearing there was read the substance of the testimony before the council against Sherman, and he was permitted to be heard in his own behalf. The same procedure was had with respect to Avakian. Apparently the committee did not recede from its previous position. Later the president of the university appointed a special committee from the board of trustees of the university to hear an appeal from the two students. At the meeting of this special committee the students were represented by counsel. The substance of the testimony heard by the student council was read, and the students were permitted to testify and to introduce witnesses to rebut such testimony. However, they were not confronted then or at any other time face to face with their so-called accusers nor, obviously, were they given an opportunity to cross examine those persons. The special committee voted to affirm the action of the executive committee in expelling the students. Later separate mandamus actions were instituted on behalf of each student against the Dean of the College of Medicine, the president of the university, the members of the faculty executive committee and the special committee of the board of trustees to require the reinstatement in school of the students. From a decree in favor of the students, the defendants appealed to the Supreme Court of Tennessee.

In our opinion, said the Supreme Court, the hearings held prior to the final expulsion of the two students here involved were such as met the requirements of justice, both to the school and to the students, and the students were given a fair and reasonable opportunity to make their defense. While the governing authority in both public and private schools should have and does have the widest discretion in the matter of discipline, to the end that the honor and integrity of the school, as well as its scholastic standards, be maintained, that authority should recognize its responsibility to students whose honor and future destiny are within its keeping. We cannot agree with the contention of counsel for the students that a fair hearing prior to expulsion contemplates a trial as in a chancery court or in a court of law. We concur in the rule laid down in *Koblitz* v. *Western Reserve University,* 21 Ohio Cir. Ct. R. 144, as follows:

> Custom, again, has established a rule. That rule is so uniform that it has become a rule of law; and, if the plaintiff had a contract with the university, he agreed to abide by that rule of law, and that rule of law is this: That in determining whether a student has been guilty of improper conduct that will tend to demoralize the school, it is not necessary that the professors should go through the formality of a trial. They should give the student whose conduct is being investigated every fair opportunity of showing his innocence. They should be careful in receiving evidence against him; they should weigh it; determine whether it comes from a source freighted with prejudice; determine the likelihood, by all surrounding circumstances, as to who is right, and then act upon it as jurors, with calmness, consideration and fair minds. When they have done this and reached a conclusion, they have done all that the law requires of them to do.

The governing authority, the court continued, of the College of Medicine has the inherent right to expel students for acts which are contrary to good morals, which tend to lower the standards of the school in any respect, and the authority is not required to follow technical rules or procedure in bringing to trial students who have committed an offense against the institution. An accused student should be informed as to the nature of the charges made against him and the names of at least the principal witnesses against him when requested, and he should be given a fair opportunity to make his defense. He cannot claim the privilege of cross examination as a matter of right. The testimony against him may be oral or written, not necessarily under oath, but he should be advised as to its nature as well as the persons who have accused him. Students should not be compelled to give evidence incriminating themselves or which might be regarded as detrimental to the best interests of the school. Every governing authority should impress on all students their duty to protect the honor and integrity of the school. As to a right to meet his accusers face to face in an investigation of wrongdoing, we cannot fail to note that honorable students do not like to be known as snoopers and informers against their fellows. A student informing against a fellow student should not be subjected to a cross examination, which could work to the informer's public humiliation. To subject the informer to cross examination would be subversive of the best interests of the school as well as harmful to the community.

Even though the right to study medicine and to practice medicine, continued the court, is a property right, it is a qualified right, qualified to the extent that one claiming the right cannot exercise it to the prejudice and injury of others and of organized society. The due process clause of the constitution has no application to an instance as here, where the governing board of a school has rightfully exercised its inherent authority to discipline students after due notice and a fair hearing and courts will not interfere with the discretion of school officials

in matters affecting discipline of students unless there is a manifest abuse of discretion or where their action has been arbitrary or unlawful. Since such conditions are not present here, the court ordered the dismissal of the actions instituted by the students and in effect affirmed the order of the executive committee expelling them from the university. The Supreme Court of the United States subsequently denied certiorari.—*State ex rel. Sherman v. Hyman and State ex rel. Avakian v. Same, 171 S. W. (2d) 822 (Tenn., 1942); 63 S. Ct. 1158.*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 18-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for Thoracic Surgery, Chicago, May 5-6. Dr. Richard H. Meade Jr., Kennedy General Hospital, Memphis, 15, Tenn., Secretary.

American Association of Industrial Physicians and Surgeons, St. Louis, May 8-11. Dr. Edward C. Holmblad, 28 East Jackson Blvd., Chicago, Managing Director.

American Association on Mental Deficiency, Philadelphia, May 11-15. Dr. Neil A. Dayton, Mansfield Training School, Mansfield Depot, Connecticut, Secretary.

American Society for Clinical Investigation, Atlantic City, May 8. Dr. Wesley W. Spink, University Hospitals, Minneapolis, Secretary.

Arizona State Medical Association, Phoenix, April 14-15. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 17-18. Dr. W. R. Brooksher, 602 Garrison Avenue, Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 9. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland, Secretary.

Association of State and Territorial Health Officers, Washington, D. C., March 20-23. Dr. G. C. Ruhland, 300 Indiana Ave., N.W., Washington, D. C., Secretary.

California Medical Association, Los Angeles, May 7-8. Dr. George H. Kress, 450 Sutter Street, San Francisco 8, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., March 22. Dr. A. J. Chesley, State Office Building, St. Paul, Minn., Secretary.

Connecticut State Medical Society, Bridgeport, May 2-4. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Florida Medical Association, St. Petersburg, April 13-14. Dr. Shaler Richardson, 111 West Adams St., Jacksonville, Secretary.

Georgia, Medical Association of, Savannah, May 9-12. Dr. Edgar D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

Iowa State Medical Society, Des Moines, April 20-21. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Topeka, May 10-11. Dr. F. R. Croson, 112 West Sixth Street, Topeka, Secretary.

Louisiana State Medical Society, New Orleans, April 24-26. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore, Secretary.

Minnesota State Medical Association, Rochester, April 13-15. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 9-10. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, April 23-25. Dr. Ralph L. Thompson, 634 N. Grand Blvd., St. Louis, Executive Secretary.

National Tuberculosis Association, Chicago, May 10-12. Dr. Charles J. Hatfield. 1790 Broadway, New York, Secretary.

Nebraska State Medical Association, Omaha, May 1-4. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln, Secretary.

New Jersey, Medical Society of, Atlantic City, April 25-27. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, New York, May 8-11. Dr. Peter Irving, 292 Madison Ave., New York 17, Secretary.

North Carolina, Medical Society of the State of, May 1-3. Dr. R. D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Fargo, May 7-9. Dr. L. W. Larson, 221 5th Street, Bismarck, Secretary.

Northern Tri-State Medical Association, Toledo, Ohio, April 11. Dr. Oscar P. Klotz, 127 W. Hardin St., Findlay, Ohio, Secretary.

Ohio State Medical Association, Columbus, May 2-4. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.

Oklahoma State Medical Association, Tulsa, April 24-26. Dr. L. J. Moorman, 1200 N. Walker St., Oklahoma City, Secretary.

Society of American Bacteriologists, New York, May 3-5. Dr. W. C. Frazier, 310 Agricultural Hall, University of Wisconsin, Madison, Wis., Secretary.

Tennessee State Medical Association, Nashville, April 11-13. Dr. H. H. Shoulders, 706 Church St. Nashville, Secretary.

Texas, State Medical Association of, Dallas, May 10-11. Dr. Holman Taylor, 1404 W. El Paso Street, Fort Worth, Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Sixteenth Annual Meeting, Held in Chicago, Nov. 5, 1943

The President, Dr. JOHN WALKER MOORE, Louisville, Ky., in the Chair

(Concluded from page 737)

Comparative Value of Blood Substitute Used for Experimental Shock

Dr. C. C. Scott, H. M. Worth, A.B., and E. B. Robbins, B.S., Indianapolis: Shock was produced in dogs by use of pneumatic venous tourniquets. In order to compare various blood substitutes effectively, animals were carried to the same level of shock. Unless given treatment, these animals all died. The volume of blood substitute injected was calculated as the amount necessary to decrease the hematocrit to the starting value. The fluid was given intravenously over a period of an hour immediately after removal of the tourniquets. Survival for two days was considered a cure. The blood substitutes tested were citrated dog plasma, heparinized dog plasma, 7 per cent gelatin, 3 per cent pectin, 3 per cent polyvinyl alcohol and 0.9 per cent saline solution. In each case 10 dogs were used, except that for citrated plasma and saline solution 20 animals were tested. The results were not significantly different for any of these blood substitutes. In another series of dogs carried to a deeper level of shock there was still no difference in the effectiveness of plasma and saline solution. In this type of shock, colloidal properties of the fluid used for treatment seemed to be of little importance in counteracting shock. It appeared that the effective part of the blood substitute was either water or saline solution.

DISCUSSION

Dr. L. N. Katz, Chicago: I believe that sodium chloride is the essence of treatment in the early stages of shock. When capillary permeability is altered so that the fluid can leak out, it is undoubtedly harmful. The practical value of these studies is that when one deals with soldiers at the front and when plasma is not quickly available, one can get good results by using saline solution in the early stages of shock. When the supply of plasma is limited, this procedure would save it for those cases in which trial by saline solution is not effective or for those cases in which shock is more advanced or in which hemorrhage has occurred.

Dr. Heinrich Necheles, Chicago: Saline solution undoubtedly has its uses in early shock. I have produced more advanced traumatic shock in animals and treated them with saline solution, and all the animals died. I have repeated the experiments, and a high percentage of the animals treated with blood plasma or serum lived. I have taken as the index of the degree of shock the extent and the duration of the hypotension and the carbon dioxide content of the blood. I have found that with a carbon dioxide value and hypotension below certain levels none of the animals will survive regardless of the type of therapy. At higher levels the animals treated with colloidal substances, including plasma, will live. At these same advanced stages of shock saline solution leaves the circulation as fast as it is given. After a transient rise in the levels the blood pressure, carbon dioxide and plasma proteins drop more rapidly than before, and the downward course of the animals is accelerated. It is obvious that saline solution cannot replace plasma and colloid materials in the treatment of advanced shock. Each has its place, and one must be careful to specify the stage of shock under consideration.

Dr. Frank H. Bethell, Ann Arbor, Mich.: I have produced traumatic shock in dogs, and the hemoconcentration precedes the drop in blood pressure. The burden cannot be carried by saline solution, but blood plasma will lead to recovery of the patient.

Dr. Charley J. Smyth, Eloise, Mich.: During the past eighteen months Dr. S. D. Jacobson and I have determined the influence of the intravenous administration of a 5 per cent gelatin solution on the plasma volume in cases in which no detectable cardiovascular disease was present. A total of fifty-six injections of gelatin have been studied in 45 cases. The plasma volume is successfully elevated in all cases, and this elevation is maintained for an average of four hours. The average total

amount of gelatin recovered from the urine after forty-eight hours was 80 per cent of that injected. We have no evidence to indicate that gelatin is metabolized. In an effort to determine whether gelatin was effective in the treatment of cases of surgical shock we have used it in 30 cases and in all of them there has been a satisfactory clinical improvement in the blood pressure and in the rate and volume of the pulse. These observations indicate that this substance, which is readily available, can be given safely, is stable, is nonantigenic and warrants further clinical trial as a plasma substitute.

DR. NECHELES: Have you encountered plasma reactions in your dogs and have you had any difficulty from dog plasma? Dog plasma is often toxic, and consequently I was wondering if you had controls with injections of whole blood.

DR. SCOTT: In answer to Dr. Necheles, of 20 animals given citrated plasma, 10 received pooled plasma and the others were given unpooled plasma. Two dogs died during infusion, possibly from plasma reactions. However, they were excluded from the results. No reactions were observed in any other animals. Concerning the question of a possible relation between hemoconcentration and blood pressure fall, I reported to this meeting last year that we were unable to find any correlation in this respect. In dogs subjected to a shock procedure and given no treatment, there was no difference in degree of hemoconcentration in animals which died or recovered spontaneously. Hemoconcentration occurred mainly in the first two hours of the experiment. We do not claim that these results are a final answer to the problem of blood substitutes. Evaluation of treatment in shock is difficult. Our findings are based on experimental procedures different from those of other investigators; consequently, comparisons are difficult. It would be unfair for us to maintain that our results would hold true in other forms of shock.

DRS. R. H. LYONS, S. D. JACOBSON and JOHN NEERKIN, Ann Arbor, Mich.: Comparisons have been made of the percentage change in hematocrit serum protein concentration, total circulating protein and red cell mass with the plasma volume by means of regression lines and the correlation coefficients.

Penicillin: Clinical Study of Its Therapeutic Effectiveness

DRS. PAUL O. HAGEMAN, SAMUEL P. MARTIN and W. BARRY WOOD JR., St. Louis: As a part of cooperative investigation directed by the Committee on Chemotherapeutic and Other Agents of the National Research Council, 22 patients were treated with the sodium salt of penicillin. The drug was given intravenously every two to four hours in doses varying from 10,000 to 20,000 Oxford units. When intravenous injections were not practical, the intramuscular route was employed and individual doses were adjusted to the size of the patient and the severity of the infection. Intrathecal injections were used in the treatment of meningitis. Whenever localized and accessible foci of infection developed, penicillin was introduced directly into the site of infection. In a small group of patients with local infections the treatment was limited to the local use of the drug. The penicillin treatment was limited in most cases until signs of infection had subsided and the temperature had been normal for several days.

Nine patients with staphylococcic septicemia were treated, and all but 1 recovered. The 8 survivors included a child with purulent pericarditis, whose blood yielded 200 staphylococcus colonies per cubic centimeter, a young boy with 140 colonies per cubic centimeter of blood and acute osteomelitis of the pelvis, and an infant with empyema and blood culture showing innumerable staphylococci. The 1 patient who failed to survive was suffering from an acute staphylococcic endocarditis and died following the rupture of a brain abscess.

Four patients with staphylococcic infections without bacteremia responded favorably to penicillin therapy. The infections in this group of cases were pneumonia and empyema, a postoperative wound infection, a chronic osteomyelitis of the humerus and a chronic osteomyelitis superimposed on a tuberculous hip infection. The last infection responded only temporarily to the chemotherapy.

Two patients with pneumococcic infections likewise responded favorably to penicillin treatment. The first patient entered the hospital with mastoiditis, lateral sinus thrombosis, petrositis, meningitis and bacteremia due to the type III pneumococcus. In spite of the fulminating character of the infection she recovered completely following mastoidectomy, ligation of the jugular vein and penicillin treatment given intravenously, intrathecally and into the mastoid wound. The second patient was suffering from early empyema due to the type V pneumococcus. Penicillin was injected into the pleural cavity, and the infection subsided without surgical drainage.

Penicillin was also used with success in the treatment of a mixed postpneumonectomy infection of the pleural cavity. One patient with agranulocytic angina recovered without complication following the use of penicillin.

Unfavorable results were encountered in the treatment of 3 patients with anaerobic streptococcic infection, all of whom ultimately died. Two patients with chronic pulmonary suppuration showed no response to the parenteral administration of penicillin.

Toxic reactions to penicillin were not observed. Although the therapeutic results were most gratifying in the treatment of even the most severe bacterial infections, it is suggested that they may be improved by the use of somewhat larger doses of penicillin than were used in the present study.

The Calcium Salt of Penicillin

DRS. WALLACE E. HERRELL and DONALD R. NICHOLS, Rochester, Minn.: We have studied a calcium salt of penicillin which was available in this country. Using the tissue culture method for the study of cytotoxicity of bactericidal agents previously described by Heilman and one of us (Herrell), it has been found that the calcium salt we used is less toxic for cellular elements than the now commonly used and completely safe sodium salt. The calcium salt in the dry state in sealed ampules kept away from the light at room temperatures for fifty-six days lost no potency. Further studies have also been made concerning the toxicity of the calcium salt. We have administered the calcium salt both intravenously and intramuscularly. The calcium salt has been found entirely satisfactory for the treatment of infections in human beings. Twelve cases of moderately severe and severe infections are included in the report. In all 12 the continuous intravenous drip technic was employed. The largest daily dose of the calcium salt of penicillin that was administered was 44,000 Oxford units. Since Florey and his associates considered therapeutic intravenous or intramuscular use of the calcium salt inadvisable, it seems possible that the calcium salt investigated by them differed in some way from the preparation studied by us.

DISCUSSION

DR. C. J. WATSON, Minneapolis: Dr. Wesley Spink is unable to be here, but here is a brief summary of his findings: The sodium salt of penicillin has been evaluated at the University of Minnesota Hospital in the treatment of 38 patients with various types of bacterial infections. Penicillin rapidly sterilizes the blood stream of patients having acute staphylococcic and hemolytic streptococcic bacteremia. While staphylococcic bacteremia may be controlled, associated bone lesions may appear to progress during and after therapy. Nevertheless the bones appear to recalcify without demonstrable residual infection. Penicillin was remarkably effective in the treatment of 5 cases of gonorrhea. Two of the 5 patients had a complicating tenosynovitis and arthritis, which was controlled with penicillin. Penicillin produced a remarkable therapeutic effect in an instance of pneumococcic bacteremia and empyema refractory to sulfonamide therapy and in 1 case of lung abscess of unknown cause. The latter case has not been followed long enough to determine the eventual outcome. Penicillin was without effect in the treatment of 3 patients with subacute bacterial endocarditis and 2 patients with pneumococcic meningitis. The local use of penicillin on 2 patients with staphylococcic skin lesions produced only temporary improvement. This mode of therapy merits further investigation. The treatment of 38 patients with penicillin was uncomplicated by toxic manifestations with the exception of 1 patient, who noted flushing of the face and who developed thrombophlebitis at the site where the material was injected.

DR. DOUGLAS DEEDS, Denver: I have treated 3 patients with the sodium salt of penicillin. My first case should not be counted as a penicillin failure, although it ended fatally. Fifty thousand Oxford units of penicillin was left over in solution in 1,000 cc. of isotonic solution of sodium chloride. I kept it in the ice box

for a little over five days and gave it by continuous intravenous drip over a twenty-four hour period to a patient in the forty-second day of his intractable sulfonamide resistant gonorrhea. The response was dramatic. Within twenty-four hours he was cured, left the hospital a few days later and has had no recurrence. The third patient was a boy with an acute osteomyelitis of the humerus complicated by staphylococcic septicemia. He was in poor condition, and sulfonamide therapy had not controlled his infection. Penicillin swung the tide in his favor, and he is now apparently well on the road to complete recovery. I am sure that he would have died without penicillin.

DR. E. L. DEGOWIN, Iowa City: A patient with septicemia due to hemolytic Staphylococcus aureus was moribund at the time she received penicillin. She had a large liver and was deeply jaundiced. There were 3,500 organisms per cubic centimeter in the blood stream. She was given 160,000 Oxford units of penicillin at one time. Four hours later there was less than 1 organism per cubic centimeter of blood. The patient then died of hepatic insufficiency. Only a few viable organisms could be cultured from the abscesses in the kidneys.

LIEUT. COMDR. D. H. ROSENBERG (MC), U.S.N.R., U. S. Naval Hospital, Great Lakes, Ill.: I should like to ask Dr. Hageman what dose of penicillin he used in the treatment of his patients with meningitis, and whether or not he noticed any reaction from the penicillin when used intrathecally. A patient with a septic form of scarlet fever complicated by acute otitis media had received prolonged sulfadiazine therapy without any beneficial effect. Fever had persisted, and on the eighteenth day of admission drowsiness, motor aphasia and right hemiparesis gradually appeared, followed later by recurrent colonic convulsions. The temperature rose to 105.4 F. A diagnosis of cerebral abscess (left temporofrontal) was made. He was given penicillin in doses of 40,000 Oxford units every two hours for two days. The dose was then reduced to 20,000 units every three hours and later to 10,000 units every three hours. His condition progressively improved, and the temperature returned to normal on the sixth day of therapy. A total of 2,360,000 Oxford units was used. This patient ultimately made a complete recovery. Comdr. L. L. Veseen has used penicillin in a number of cases of chronic gonorrheal urethritis and prostatitis which had been refractory to sulfonamide therapy. Within a few hours the urethral discharge diminished and the patients were fit for duty in two to four days. Similarly, in patients with sulfonamide resistant gonorrheal arthritis penicillin produced evident improvement in the joint symptoms within six to eight hours, and the temperature and pulse returned to normal within forty-eight hours.

DR. SPAFFORD ACKERLY, Louisville, Ky.: Have the authors had experience with chronic osteomyelitis?

DR. HAGEMAN: In answer to the question about intrathecal dosage, we injected 10,000 units intrathecally and observed no untoward reactions. Anaerobic streptococcic infections did not do well in our hands. It is our belief that these were undertreated. We did have 2 cases of chronic osteomyelitis, both of which cleared up under penicillin treatment. I should like to ask Dr. Herrell about dosage. It has struck me that the doses he employed have been smaller than we used. I wonder if he feels that we are overtreating our patients.

DR. HERRELL: As long as a solution of the sodium salt is kept in the ice box in a closed container, it does not lose potency as rapidly as is commonly believed. I have kept solutions of the sodium salt at ice box temperatures (+ 5 C.) for over a month with little, if any, loss of potency. The same is true of the calcium salt in solution. One should not therefore throw away solutions of penicillin that have been kept for a few days at ice box temperatures. Solutions of either of the salts kept at room temperature do lose potency rather rapidly. The sodium salt, even in the dry state, is not very stable at room temperatures, whereas the calcium salt appears to lose no potency at room temperature for a period of approximately two months. It is difficult to make final statements concerning the most desirable daily dose of penicillin for the treatment of infections. It is my feeling that the amounts I have used are satisfactory in most instances when the material is given by the intravenous drip method. Failures are sometimes accredited to inadequate amounts of the material being used. On the other hand, the unsatisfactory results cannot all be explained on the basis of inadequate therapy. Regardless of how much penicillin is given, there are complications which develop in the treatment of sepsis which cannot be overcome by the chemotherapeutic agent regardless of how much is employed. There has been a feeling among some investigators that it is necessary to give penicillin to the point where it can be demonstrated in the blood stream by the methods now available for identifying it. When enough penicillin is present in the serum of patients being treated with penicillin to demonstrate its presence by these methods, the amount is far in excess of ordinary therapeutic requirements. This belief has received some confirmation in a recent communication from Fleming. A communication from Florey also is confirmatory. He found that when a patient has been given 100,000 units of penicillin in twenty-four hours by the intravenous drip method for acute sepsis the serum may be diluted a half with isotonic solution of sodium chloride and still there is present a complete inhibition of the test inoculum. This is merely a way of saying that 100,000 units a day is twice as much as is necessary with the intravenous drip treatment. For this reason I have rarely used more than 60,000 units a day. These opinions cannot be considered as final, but the whole question of dose should be carefully examined. If one can obtain satisfactory therapeutic results with 40,000 to 60,000 units in twenty-four hours instead of 100,000 to 200,000 units, it will mean that much penicillin saved for another patient.

Renal Damage Due to Sulfonamides

DRS. FRANCIS D. MURPHY, JOSEPH F. KUZMA, THEODORE Z. POLLEY and JOHN GRILL, Milwaukee: Kidney damage due to sulfonamides may result from the nephrotoxic action of the drug as well as from mechanical obstruction following crystal formation. Fourteen patients were studied, and the clinicopathologic results are reported here.

In 8 cases sulfathiazole was used, in 3 sulfadiazine, in 2 sulfanilamide and in 1 sulamyd. The doses of the drugs were given according to the accepted methods. In 5 of the 14 cases observed there was a mild albuminuria before the use of sulfonamides, and in 9 no evidence of kidney disorder. The first evidence of serious kidney disease after the use of sulfonamides was oliguria in 5 cases and anuria in 1 case. In the remaining 8 cases the first signs consisted of heavy albuminuria, many red blood cells, pus cells and casts. Other evidences of renal impairment were generalized edema in 1 case and some nitrogen retention in all cases. In 5 cases the onset was on the fifth day after the beginning of treatment. In 2 instances it occurred on the first day, and in another 2 on the third day. In the other cases the earliest signs of kidney damage occurred on the second, fourth, seventh, eighth and ninth days respectively. Blood levels at the time of recognition of kidney injury varied from 3.9 to 16.7 mg. per hundred cubic centimeters. Uremia due to sulfonamide intoxication caused death in 6 cases. Streptococcic septicemia was the cause in 2 instances. Each of the following conditions was responsible for one death: (1) lobar pneumonia with lung abscess, (2) sepsis and generalized peritonitis after cesarean section, (3) cirrhosis of the liver and bronchial pneumonia, (4) glomerulonephritis superimposed on diabetes and (5) bronchopneumonia with massive lung collapse. In the other case, decapsulation of the kidney was successfully done and a section removed for biopsy.

The pathologic changes in the kidney attending sulfonamide therapy may be divided into two main groups; the first results from mechanical damage to the kidney, and the second from the toxic action of sulfonamides on the renal parenchyma.

DISCUSSION

DR. FRANCIS D. MURPHY, Milwaukee: When so-called nephrotoxic lesions occur in the kidney there is difficulty in healing them. Formerly it was believed that diminishing output of urine was fair warning that the kidney was badly damaged, and the corollary was that with diminishing oliguria the kidney damage had begun to heal. We are not sure that this holds good in the sulfonamide nephrotoxic kidney. Albuminuria is not a strict contraindication to the use of these drugs. There are cases of acute nephritis in which albuminuria disappeared under the use of sulfonamides.

DR. C. J. WATSON, Minneapolis: With sulfanilamide and sulfapyridine it was relatively unimportant whether the urine was alkaline or acid. It is entirely different with sulfadiazine and sulfamerazine. Dr. Wendell Hall and Dr. Wesley Spink at the University of Minnesota Hospital have been able to maintain blood levels of 40 to 60 mg. per hundred cubic centimeters of these compounds for a number of days without any evidence of renal damage if the p_H of the urine is kept above 7.0 continuously. This is achieved by giving sodium bicarbonate frequently and in adequate amount.

DR. SPAFFORD ACKERLY, Louisville, Ky.: I should like to ask how frequently drug rash and drug fever preceded these reactions.

DR. ARMAND J. QUICK, Milwaukee: Is it not possible to look on this untoward action of the drug as being similar to that produced in the liver by cinchophen after sensitivity to that drug has been produced? In other words, can we consider the kidney as having become sensitized?

DR. K. K. CHEN, Indianapolis: In experimental animals sulfanilamide does not produce renal lesions. We have incorporated this drug in the food to the extent of 5 per cent. Some animals will die, but we cannot find any kidney lesions. Sulfapyridine or sulfadiazine given in the same manner uniformly produces renal damage. In clinical literature I have gained the impression that it is rare to have kidney lesions with sulfanilamide. I should like to be informed how often the authors have encountered renal damage as a result of sulfanilamide therapy.

DR. KUZMA: Precipitation of the sulfonamides is one thing and nephrotoxic action on the kidney is another. They may be present at the same time, or one may follow the other. Many cases of crystalluria followed a nephrotoxic condition. If alkalinity of the urine is maintained, it will prevent crystallization of the sulfonamides. On the other hand, it does not prevent the nephrotoxic complications. The changes we observed were minimal. However, simple tubular degeneration and glomerular swelling do occur even with sulfanilamide.

Gold Toxicity in Relation to Gold Salt Therapy for Rheumatoid Arthritis

DR. R. H. FREYBERG, W. D. BLOCK, PH.D., and W. S. PRESTON, PH.D., Ann Arbor, Mich.: To learn more concerning the tissue damage which might result from gold, rats were injected with equivalent amounts of gold contained in compounds with grossly different chemical and physical properties. Results showed that soluble gold salts (gold eliminated chiefly in urine) when given in large amounts (much larger than compared with therapeutic doses) invariably cause severe damage to renal tubules which contain large amounts of precipitate of the heavy metal, moderate glomerular damage and albuminuria. The severity of pathologic changes was in direct proportion to the amount of gold injected. No other organs showed any important pathologic change. Oil suspensions of crystalline gold salts produced renal lesions in proportion to the solubility of the salt or the availability of the gold. Colloidal gold preparations (gold largely retained) caused no important renal disorder but produced livers and spleens packed full of the heavy metal phagocytized in the reticuloendothelial cells. The parenchymatous cells of the respective organs were damaged in proportion to the amount of phagocytosis. With all the preparations studied the histologic changes were proportional to the amount of gold found (by chemical analysis) in organs of rats injected with gold preparation in identical manner.

These animal studies indicate that gold may act as a parenchymatous poison and show the nature of the pathologic change. The possibility that in some patients a difference in absorption or excretion rate might account for toxicity was considered. When it became possible to determine accurately plasma concentration and urinary content of gold we hoped that chemical measurements might control treatment to allow adequate dosage for satisfactory therapeutic effect and present overdosage toxicity, comparable to chemical control of thiocyanate therapy for hypertension. This has not been possible. Toxicity has developed in some patients having plasma gold concentration and urinary excretion of gold less than, comparable to or in excess of average values for patients similarly treated, without toxicity. Skin biopsies from portions of the integument showing gold dermatitis contained gold in amounts comparable to normal skin of nontoxic patients similarly treated. Gold toxicity developed in arthritic patients with normal as well as deficient blood ascorbic acid.

It appears therefore that gold toxicity in human beings is seldom due to parenchymatous poisoning effects except in some cases of nephritis. There are many indications that clinical toxicity is most often an allergic type of reaction. Patch tests using soluble salts commonly employed in treatment failed to indicate skin sensitivity in the patients who had dermatitis or other types of toxic reactions. Elemental gold and the chemical combinations of gold used in treatment seem not to be responsible for an allergic toxic reaction. Because gold injected in any form is found to circulate in intimate combination with serum protein almost entirely it was suggested that a gold proteinate may be allergenic in "toxic individuals." Intradermal injections with mixtures of gold salts and human serum or plasma (containing gold in an amount comparable to that usually found during treatment and some mixtures with tenfold gold concentration) produced no more positive skin reactions in patients with clinical gold toxicity than in gold treated patients without toxicity or other control subjects.

The nature of the suspected allergen responsible for most instances of gold toxicity remains obscure. The major factor of clinical importance in regard to toxicity from gold used in the treatment of arthritis is the speed of administration of the drug.

Treatment of Multiple Sclerosis by the Intravenous Administration of Histamine

DRS. BAYARD T. HORTON, H. P. WAGENER, J. A. AITA and H. W. WOLTMAN, Rochester, Minn.: Of 24 among 102 patients the disease may be regarded as acute; that is, the patients had had symptoms of multiple sclerosis for a period of a few weeks to a month or two, whereas the remaining 78 patients had had symptoms from one to twenty years. Many of the patients who had an acute form of the disease were more incapacitated than those who had a chronic form, as evidenced by the fact that many were brought to the clinic on stretchers and in wheelchairs. Their ages ranged from 16 to 58 years. Fifty-two were males and 50 were females.

Treatment consisted in the daily intravenous administration of 2.75 mg. of histamine diphosphate in 250 cc. of isotonic solution of sodium chloride at the rate of 30 to 90 minims (2 to 6 cc.) per minute, depending on the tolerance of the patient. The average patient received forty to fifty such injections; the minimal number was thirteen and the maximal number was three hundred. The prompt improvement that follows histamine therapy probably results from vasodilatation in the central nervous system.

Of the 24 patients who had an acute form of the disease, 18 are essentially clinically well, 1 has shown 70 per cent improvement, 1 50 per cent improvement and 1 40 per cent improvement, and 3 have shown no improvement. Two of the latter 3 are still receiving treatment.

Of the 78 who had an advanced or chronic form of the disease, 36 have shown varying degrees of improvement, ranging from 10 to 95 per cent. The remaining 42 patients have shown no objective improvement, although many were subjectively improved.

In subjects with ocular manifestations, such as the loss of vision and paralyses of the ocular muscles, the recovery seems to have been more rapid and complete with histamine therapy than we have observed in other forms of therapy.

We have given a total of six thousand injections without any ill effects except that 1 man, aged 20, had an acute gastric ulcer develop after thirteen injections had been administered. It healed completely within twelve days. Symptoms of multiple sclerosis disappeared. The patient previously had received twenty-four intravenous injections of typhoid vaccine in three months without any apparent improvement.

No type of therapy will be wholly effective in cases of advanced multiple sclerosis in which gliosis has occurred. Spontaneous remissions occur in many instances, so that it is difficult at present to evaluate fully this type of therapy. Early diagnosis is important and, if treatment is carried out before irreversible changes occur in the central nervous system, one may accomplish a great deal.

DISCUSSION

DR. H. P. WAGENER, Rochester, Minn.: Here is an interesting experimental therapy that permits the patient to be ambulatory as opposed to the confining routine of typhoid vaccine treatment, for example. It is carried out without danger and easily administered. We have been impressed by the prompt relief from neurologic signs and symptoms in certain cases at Dr. Horton's laboratory. Yet we know that the disappearance of signs and symptoms is one of the spontaneous and most characteristic features of multiple sclerosis itself. Practically every report of a new treatment for multiple sclerosis is colored with favorable, if not even enthusiastic, presentation of data. These cases have been followed only fifteen months at the most. It will take at least five years to evaluate fully the effect of this treatment on a large number of patients, preferably over a hundred in number.

DR. J. A. AITA, Rochester, Minn.: In a person suffering from multiple sclerosis, retrobulbar optic neuritis may develop in an acute or in a chronic progressive form. In the acute form, with abrupt onset and rapid loss of vision even to the point of complete blindness, a tendency to spontaneous recovery is present in the majority of cases. Employment of some type of vasodilator therapy appears to shorten the period of disability and distinctly improves the visual end results, especially in cases of severe or total primary loss of vision. Histamine given intravenously has proved to be an adequate and highly satisfactory substitute for the methods of treatment employed formerly, notably typhoid vaccine or other forms of foreign protein. It is more universally applicable, is less discommoding to the patient, does not necessitate hospitalization and, on the average, results in a more rapid and complete recovery of vision. The prognosis for recovery or maintenance of vision in the chronic progressive form of retrobulbar neuritis has always been poor in spite of the employment of any of the suggested forms of treatment. Administration of histamine intravenously has resulted in moderate improvement of vision in some cases. In the main, however, this improvement has proved to be only temporary. The nystagmus and paralyses of conjugate ocular rotations and of individual eye muscles occurring in patients with multiple sclerosis cause considerable disability, especially when they are of rapid or sudden onset. I have noted the rapid return to essentially normal of the strength and balance of the ocular muscles which occurs in most instances under histamine therapy and the consequent improvement in the coordination of the patient in walking and in occupations or pursuits requiring use of the eyes.

DR. THEODORE L. SQUIER, Milwaukee: This presentation has been of special interest because of the similarity of histamine and allergic reactions and because of clinical improvement observed in 2 patients seen in 1938 and 1939, in each of whom a diagnosis of multiple sclerosis had been made. In the first patient studied for an allergic etiology of thrombocytopenic purpura a diagnosis of multiple sclerosis had been made eight years previously, and symptoms were present at the time of study. The second patient seen because of migraine present since childhood had had relatively recent manifestations of multiple sclerosis in which diagnosis neurologic consultants had concurred. Clinical food sensitivities were demonstrated in both patients, and in both not only were the presenting symptoms of purpura and migraine respectively relieved by specific food avoidance but, in addition, striking improvement occurred in the symptoms of multiple sclerosis. Because of dramatic and long continued improvement, it was felt justified in December 1942 to make an allergic study of another patient who had an acute, rapidly progressive multiple sclerosis of five months' duration and in whom there was a background of eczema, asthma and recent recurrent urticaria. When seen, she was unable to walk, had considerable visual disturbance and considerable impairment of speech. Following specific food eliminations she made a complete subjective and objective recovery within a period of about three months, so that she was able to return to all her normal activities. Recent work, especially that of Putnam and his associates, has suggested that vascular abnormalities may be fundamentally responsible for the pathologic changes occurring in multiple sclerosis; and these changes are essentially identical with those described by Abel and Schenck in the living blood vessels of rabbits during anaphylactic shock. There is a plausible basis for an allergic etiology, which if proved true even for only part of the cases, is an important contribution to management. Competent allergic investigation should precede histamine therapy. Recently I have seen 2 patients each of whom had been given intravenous histamine therapy elsewhere, who had relapses during the course of such therapy. My belief is that histamine therapy for most allergic conditions is disappointing.

DR. HORTON: We think of multiple sclerosis as a primary vascular disorder of the central nervous system with secondary changes in the nervous and interstitial tissues. As to what role allergy plays, we do not know. However, we have noted the association of hives and the onset of symptoms of acute multiple sclerosis in 1 instance. The whole problem resolves itself around the treatment of the acute phase. Early diagnosis is important, and treatment should be instituted before irreversible changes occur in the central nervous system. In cases in which the disease is advanced and the nerve elements have been replaced by neuroglia, no type of therapy will help. It may require years to evaluate histamine therapy in multiple sclerosis, but it is interesting to note that the first 3 patients so treated have remained clinically well for more than a year.

Effect on Carbohydrate Metabolism of Pork Adrenal Cortex Extract

DRS. CYRIL M. MACBRYDE and F. A. DE LA BALZE, St. Louis: In 5 of 26 of our patients with Addison's disease, hypoglycemia has been severe enough to cause frequent symptoms, and muscular weakness has been prominent. These symptoms have continued to occur in spite of adequate control of the electrolyte and water metabolism and of the blood pressure with desoxycorticosterone or beef adrenal cortex extract.

DISCUSSION

DR. DWIGHT J. INGLE, Kalamazoo, Mich.: The concentrate of hog adrenal extract is on clinical trial to test its usefulness in controlling carbohydrate metabolism and in maintaining resistance of patients who cannot be satisfactorily maintained on other forms of therapy. It is gratifying to hear of the encouraging results obtained by Dr. MacBryde and his associates.

DR. SAMUEL SOSKIN, Chicago: I agree with Drs. MacBryde and de la Balze as to the metabolic effects of adrenal cortex extracts; particularly as regards the statement that their action is exerted primarily by stimulating gluconeogenesis in the liver and not by depressing the assimilation of dextrose by the muscles. In this the cortical extracts resemble those of the anterior pituitary.

DR. MACBRYDE: When large amounts of adrenal cortex extract are given experimentally there is no doubt that excessively rapid gluconeogenesis can be produced and that a state resembling diabetes results. Under such conditions the utilization of carbohydrate is certainly hampered and not facilitated.

Plasma Protein Studies in Addison's Disease: Tiselius Electrophoresis Method

DR. E. PERRY MCCULLAGH and LENA A. LEWIS, PH.D., Cleveland: Studies were made in the electrophoresis apparatus using phosphate buffer solution p_H 7.8 according to the method of Longsworth. When the patient had symptoms of definite adrenal insufficiency there was an increased total plasma protein. The albumin, both in terms of percentage and in actual grams per hundred cubic centimeters, was decreased and the total globulin increased. The greatest increase was observed in the beta and gamma globulin, although all the globulin fractions were in the normal range or above. When the patient was well maintained, whether on desoxycorticosterone acetate pellets or desoxycorticosterone acetate pellets and adrenal extract (about 7 cc. of commercial adrenal extract per day) the plasma protein picture failed to become entirely normal. The total protein was in the normal range, but the albumin remained low.

It appeared that, with the dosages of adrenal extract and desoxycorticosterone acetate employed, some essential factor for the maintenance of a normal plasma protein picture was lacking or at least inadequate.

DISCUSSION

DR. C. J. WATSON, Minneapolis: Has the cholesterol flocculation test been tried?

DR. E. PERRY MCCULLAGH, Cleveland: The cholesterol flocculation test has not been tried.

DR. WATSON: Is the test the same whether it is due to removal or to tuberculosis?

DR. MCCULLAGH: Yes, the same. In 1 case which showed active tuberculosis the α globulin was higher than in the other cases.

Alloxan Diabetes in Dogs

DRS. MARTIN G. GOLDNER and GEORGE GOMORI, Chicago: A single intravenous injection of 50 mg. per kilogram of alloxan given to dogs causes sustained diabetes mellitus. A larger dose (100 mg. per kilogram or more) in a single injection may be fatal within a few hours or may cause a hyperglycemic-uremic syndrome (75 to 100 mg. per kilogram), to which the dogs succumb within four to seven days. A smaller dose (25 mg. per kilogram) does not produce clinical symptoms in dogs.

Alloxan diabetes in dogs is characterized clinically by polydipsia, polyuria and weight loss, by hyperglycemia and glycosuria and by hyperlipemia, which usually develops during the second or third week. The dextrose tolerance test shows a typical diabetic curve. Alloxan diabetes in dogs is insulin sensitive and can be treated with insulin. Insulin, however, does not prevent the development of diabetes if given together with alloxan. Histologically, the beta cells of the islets of Langerhans are degranulated and may disappear completely, the alpha cells appear normal, the small pancreatic ducts show vacuolization, the kidneys show glycogen deposition, and fatty degeneration of the liver is found in later stages. Bioassay for insulin in the pancreases of 2 alloxan diabetic dogs showed very low values. There seems to be no tendency to spontaneous recovery. Some dogs have survived for more than two months and have remained diabetic.

Alloxan has been proved to act on the pancreatic islet cells. It may, however, also have a primary effect on the liver. In larger doses it affects also the kidney parenchyma.

Stimulatory Effect of Diabetogenic Anterior Pituitary Extract on Pancreatic Islet Function in Human Organic Hyperinsulinism

DR. JEROME W. CONN and LAWRENCE LOUIS, Sc.D., Ann Arbor, Mich.: Two patients suffering from spontaneous hypoglycemia due to organic hyperinsulinism (pancreatic insuloma) were studied. After a control period on constant diet high in carbohydrate, 5 to 10 cc. of a clear extract of beef anterior pituitary gland (sterilized at 0 C. by Berkefeld filtration) was given daily subcutaneously. Daily fasting blood sugar levels, nitrogen balance and serial dextrose tolerance tests were obtained.

During three courses of injections (eight, thirteen and twenty-three days) in the 2 patients an evident fall of the fasting blood sugar level occurred. On cessation of injections the level rose to or above the control level. During the injection periods the average level of the fasting blood sugar was depressed 48, 38 and 36 per cent respectively below the control levels. The absolute fall of the average blood sugar was 20 mg. per hundred cubic centimeters in all 3 cases (42 to 22, 50 to 31 and 59 to 39).

In the 1 case in which three successive courses of injections were given the third course failed to depress the fasting level of blood sugar, which at that time began to rise slowly above the control level. This patient was operated on after his third course of injections. An encapsulated insuloma was removed, with complete relief of the hypoglycemic state. Biopsy of normal pancreas was also obtained. Microscopically the tumor had some characteristics of carcinoma. Special islet cell staining technics are being applied to the normal and abnormal pancreatic tissue. The second patient refused operation.

It appears that, with the amounts of diabetogenic material used, an initial stimulatory effect on pancreatic islet tissue function was obtained in 2 cases of organic hyperinsulinism. Hyperglycemia played no role in the stimulatory effect, since it was consistently absent.

DISCUSSION

DR. HENRY T. RICKETTS, Chicago: Why did not Drs. Conn and Louis continue the injections for a longer time and support the patient with dextrose with the idea of producing exhaustion of the islets, which they say can be done with this extract in dogs?

DR. CONN: It is conceivable that continuation with this type of treatment for a much longer time and with larger doses could lead to eventual "overwork degeneration" of the large amount of functioning islet tissue. If the stimulus was sufficiently great to overcome the ability of the islet tissue to respond, degeneration would result. The effect of so-called diabetogenic anterior pituitary extract appears to be directly on and stimulatory to the islets of Langerhans.

Effect of Phosphorus Feeding on the Phosphorus Metabolism in Hyperthyroidism

DR. I. DARIN PUPPEL, DR. HAROLD T. GROSS, ESTHER HERDLE, M.S., and DR. GEORGE M. CURTIS, Columbus, Ohio: We have investigated 4 normal persons over a total period of forty-eight days of low phosphorus feeding. They all remained in slight negative phosphorus balance. Five hyperthyroid patients similarly studied over a period of thirty-three days showed an increase in the loss of phosphorus over the intake. This was eight or nine times the normal loss, owing to an increase in the excretion of phosphorus both through the gastrointestinal and through the urinary system. The blood phosphorus in many serial studies almost always remained within normal limits. The disturbances in the phosphorus metabolism were similar to those of the calcium metabolism and thus different from those of hyperparathyroidism. In diffuse toxic goiter the average loss of phosphorus was twice as great as in toxic nodular goiter. This difference remained true even in comparing the phosphorus balance of a toxic nodular goiter patient with that of one with diffuse toxic goiter whose basal metabolic rate was at almost the same level.

For several years we have given a high calcium, phosphorus and vitamin D diet preoperatively to patients with hyperthyroidism. Not one has subsequently developed so-called thyroid crisis. No deleterious effects have been noted. Certain patients with impending thyroid crisis subsequent to the prolonged administration of iodine were treated successfully and more quickly prepared for surgery by use of extra amounts of calcium, phosphorus and vitamin D without employment of an iodine vacation.

Because of the clinical significance of these observations, we determined the effects on the phosphorus metabolism of feeding various compounds and combinations of calcium, phosphorus and vitamin D, including a high phosphorus diet, calcium gluconate, calcium lactate plus drisdol and dicalcium phosphate with viosterol by mouth, as well as calcium chloride by vein. In 5 patients with hyperthyroidism studied over a period of sixty-six days these extra amounts of phosphorus abruptly stopped the negative phosphorus balance. In most instances an immediate great retention occurred with development of a manifest positive balance. We have supplemented the high phosphorus diet with four of the most common types of calcium salts in therapy. They were all effective in maintaining retention of phosphorus. However, in this series wafers of dicalcium phosphate with viosterol were instrumental in producing the most conspicuous retention.

DISCUSSION

DR. E. L. SEVRINGHAUS, Madison, Wis.: Phosphorus and nitrogen will be deposited in these cases. To set up the procedure to get a high phosphorus diet there will usually be a high nitrogen diet. I wonder if Dr. Puppel has any data to show there is a high phosphorus retention without a high nitrogen. If so, the criticism that it is due to improved protein retention would not be necessary.

DR. PUPPEL: We took into consideration the nitrogen balance because it has been shown that this usually remains negative in the hyperthyroid patient unless excess protein is given to maintain a positive balance. We did not do nitrogen balance studies. It has been shown previously that the nitrogen balance usually remains positive if the patient is maintained with a daily intake of at least 1 Gm. of protein per kilogram of body weight and if the patient does not lose weight. We applied the latter clinical facts; that is, these patients were maintained at a constant weight throughout the low and high phosphorus feeding; the protein content of both the high and the low phosphorus diets was kept constant at 1.5 to 2 Gm. daily per kilogram of body weight. The caloric intake was kept at a high level of basal plus 10 to 20 per cent. The fat intake was kept low.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

26:721-872 (Dec.) 1943

Pathogenesis of Signs of Traube and Duroziez in Aortic Insufficiency: Graphic Study. A. A. Luisada.—p. 721.
Frequent Obstructive Anomaly of Mouth of Left Common Iliac Vein. W. E. Ehrich and E. B. Kraumbhaar.—p. 737.
Disseminated Arterial Intimal Proliferation, with Thrombosis: Report of Case. K. C. Kehl and G. Ritchie.—p. 751.
*Electrocardiographic Observations on 500 Unselected Young Adults at Work. P. C. Viscidi and A. J. Geiger.—p. 763.
Certain Applications of Modern Electrocardiographic Theory to Interpretation of Electrocardiograms Which Indicate Myocardial Disease. R. H. Bayley.—p. 769.
Coarctation of Thoracic Aorta with an Aneurysm Distal to Obstruction: Report of Case. J. Zaslow and S. O. Krasnoff.—p. 832.
Chronic Occlusive Arterial Disease (Arteriosclerosis Obliterans) Associated with Retinitis Pigmentosa: Case Report. J. L. Eisaman.—p. 836.

Electrocardiographic Observations in Young Adults.—Viscidi and Geiger made electrocardiographic studies on 500 apparently healthy working adults between the ages of 18 and 38 years. There was an equal number of males and females. The studies disclosed that half of the records fell outside the range of normal on the basis of authoritative electrocardiographic criteria of normality in current general use. The implication is that electrocardiographic surveys will be misleading unless criteria of what is normal are revised and broadened.

American J. Obstetrics and Gynecology, St. Louis

46:773-928 (Dec.) 1943

Development of Periurethral Glands in Human Female. J. W. Huffman.—p. 773.
*Further Experience in Management and Treatment of Carcinoma of Fundus of Uterus, with Five Year End Results in 75 Patients. L. C. Scheffey, W. J. Thudium and D. M. Farell.—p. 786.
Intravenous Pyelograms in Normal and Abnormal Pregnancies. Deborah C. Leary and J. P. Peters.—p. 803.
Mesonephroma of Ovary. R. J. Jensik and F. H. Falls.—p 810.
*Psychosomatic Treatment of Functional Dysmenorrhea by Hypnosis: Preliminary Report. W. S. Kroger and S. C. Freed.—p. 817.
Oral Hormonal Treatment of Functional Amenorrhea. B. L. Cinberg.—p. 823.
*Studies on Rh Factor. H. A. Schwartz and P. Levine.—p. 827.
Spinal Anesthesia for Cesarean Section. F. Weintraub and M. S. Merriam.—p. 836.
Evaluation of Transverse Cervical Cesarean Section: Report Based on Study of 208 Cases. G. W. Gustafson.—p. 841.
*Androgen Therapy in Pelvic Malignancy. C. T. Beecham.—p. 849.
Absorption of Radioactive Sodium Instilled into Vagina. W. T. Pommerenke and P. F. Hahn.—p. 853.
Conjugated Estrogens in Human Pregnancy Serum. A. E. Rakoff, K. E. Paschkis and A. Cantarow.—p. 856.
Effect of Medical Diathermy on Menstrual Cycle of Monkey (Macacus Rhesus). H. A. Strauss, L. Fisher and B. B. Rubenstein.—p. 861.
*Vagitus Uterinus. G. H. Ryder.—p. 867.
Effect on Spermatozoa of Tissue Fluids Encountered in Female Reproductive Tract. R. L. Brown.—p. 873.
Incarceration and Strangulation of Cervix by Ring Pessary. J. L. McGoldrick and W. A. Lapp.—877.
Occurrence of Anencephalic Monsters in Successive Pregnancies. J. K. Quigley.—p. 879.

Five Year Results in Treatment of Carcinoma of Uterine Fundus.—A consecutive series of 127 cases of carcinoma of the uterine fundus were analyzed by Scheffey and his co-workers. In 75 of these the five year end results could be surveyed. Four out of 5 women had passed their menopause. The average age of this group was 58.9 years, and the diagnosis was suspected correctly in 90 per cent because of the postmenopausal bleeding. In the premenopausal group the average age was 46.3 years. In 10 per cent carcinoma was not suspected. It is among these younger women who have not ceased menstruating that irregular bleeding is too often regarded as benign in origin, and ill advised or inadequate treatment results. Abnormal uterine bleeding was the most significant and reliable symptom in 96 per cent of the entire series. The value of diagnostic curettage is apparent. Fibromyomas were noted in approximately 38 per cent of all patients treated surgically, and palpation suggested their presence in a number of irradiated patients. Previous pelvic operative procedures had occurred in nearly 30 per cent of all the patients. Carcinoma was thought to be limited to the uterus in 74 per cent of the patients when they were first seen, irrespective of the size of the uterus. Low grade lesions respond equally well to irradiation and to surgery, but it would seem that the survival rate in intermediate and high grade lesions is materially improved when irradiation has been a factor in the treatment, either singly or in combination with surgery. Prognosis based on the grade of malignancy alone is uncertain. The five year survival rate was 18.1 per cent with surgery alone, 40.5 per cent with irradiation alone and 38.4 per cent (corrected for uteri actually removed, 42.9 per cent) with surgery and irradiation. The authors are convinced that preliminary irradiation with radium, followed by complete operation eight to ten weeks later, is the treatment of choice for carcinoma of the fundus.

Treatment of Dysmenorrhea by Hypnosis.—Kroger and Freed applied the following procedure to 4 patients. Hypnosis was induced after rapport was established with the patient. This was characterized by a state of generalized hypersuggestibility. Suggestions were made in this state that the next menses might be free from pain or without excessive discomfort. Also suggestions were made that the next menses would be normal in all respects. Posthypnotic suggestions last about a month, and when repeated the desired effect may become permanent. All 4 patients were permanently cured. Only one treatment was necessary to bring about a permanent relief in 2 cases. Three to twelve treatments were necessary for the other 2 cases. Some cases of functional dysmenorrhea present a psychosomatic pattern which may be responsible for a lowered pain threshold. Because psychogenic factors contribute to the dysmenorrhea, they must be determined by an exhaustive study of the personality. The authors have utilized age regression with hypnoanalysis in 5 cases. The patient is regressed to a preadolescent age or reverted to the age prior to the onset of dysmenorrhea. The patient is then slowly reoriented to the present chronological age. The development of emotional conflicts, personality changes, inhibitions or harmful habit patterns can be discovered. Appropriate suggestions are then made toward their removal. After the patient's consciousness is reeducated by intensive psychotherapy under hypnosis, a cure may be effected readily. Hypnosis when used in these cases is only the means toward treatment, not the cure itself. It speeds up the analytic process. Of 9 patients treated, 7 were completely relieved of their menstrual discomfort following the use of hypnosis either by itself or with hypnoanalysis and age regression. One was partially relieved and the 1 failure was due to factors beyond the authors' control.

Studies on the Rh Factor.—Beginning in February 1941 and continuing for a period of sixteen months, Schwartz and Levine studied the bloods of selected patients to determine whether they were Rh + or Rh —. Potent anti Rh agglutinins derived from mothers of erythroblastic infants now had become available. All serums were also tested for the presence of anti Rh or other atypical agglutinins. An attempt was made to examine the blood of each mother who had an unexplained stillbirth or neonatal death and of some mothers with various complications of pregnancy. The authors conclude that in most instances erythroblastosis fetalis is produced as a result of isoimmunization of the Rh — mother by Rh + fetal erythrocytes. The action of maternal anti Rh agglutinins on the susceptible fetal red cells is the source of the hemolysis in the fetus during intrauterine life. Among 162 consecutive stillbirths and neonatal deaths the incidence of erythroblastosis fetalis is somewhere between 4.4 and 8.2 per cent. Rh studies indicate that the incidence of erythroblastosis fetalis in this series is twice that heretofore given on the basis of clinical and pathologic diagnosis. In cases of intrauterine death occurring well in

advance of labor, as evidenced by fetal maceration, the incidence of erythroblastosis is somewhere between 16.6 and 29.1 per cent. Studies of a relatively small series of cases indicate that the Rh factor is important in the production of late but not of early abortions and that it is unimportant in the etiology of hemolytic jaundice, sicklemia, hydatidiform mole and ectopic pregnancies. While infants with erythroblastosis fetalis are often premature at birth, most causes of prematurity appear unrelated to the Rh factor. Proof for the possible relationship of blood incompatibility of the mother and her fetus to eclampsia and specific toxemia is still to be provided.

Androgen Therapy in Pelvic Cancer.—Beecham submitted a small group of patients with ovarian carcinoma (also two with carcinoma of the cervix) to androgen therapy. These cases were hopeless and it was felt that no harm could result from endocrine therapy. Although the final results in these cases were identical to similar cases in which androgenic therapy was not employed, the author is of the opinion that this method is definitely worth while. The pain experienced by the majority of these patients was almost completely relieved, and they were much improved as evidenced by their gain in weight. Such results cannot be expected from opiates and high voltage roentgen therapy. None of the cases demonstrated evidence of reduction in size of the neoplasm, nor were histologic changes found. The author thinks that androgenic therapy should be further tried in cases of this type.

Vagitus Uterinus.—A woman aged 35 had had previous deliveries. One was a breech delivery which resulted in a permanently atrophied arm and the second a high forceps delivery which resulted in a stillbirth. Ryder reports that she had been promised that the third delivery, unless it could be normal, should be by cesarean section. For this delivery she came to the hospital in active labor. The baby was small, with the head high at the pelvic brim in occiput posterior position. Labor progressed rapidly. It seemed as though delivery would be normal and quick, but the head did not descend. The cervix was found fully dilated with the head well engaged. Forceps were applied, but moderate tractions caused no advance. The forceps were removed and preparations for a cesarean section were made. With a stethoscope on the patient's abdomen the fetus could be heard crying loudly. When the crying stopped, the fetus could be heard breathing with gurgling respiration as though choking with fluid. It seemed probable that the fetus would inspire too much liquor amnii and it was considered unwise to wait for the section. Breech extraction was performed and resulted in the birth of an undamaged baby which was soon revived and crying lustily. Reference to 131 cases of vagitus uterinus were found in the literature of various countries from 1546 to 1941.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

50:719-852 (Dec.) 1943

Annular Shadows of Unusual Type Associated with Acute Pulmonary Infection. L. R. Sante and C. E. Hufford.—p. 719.
*Roentgenographic Aspects of Monaldi's Cavity Aspiration in Pulmonary Tuberculosis. W. R. Oechsli and E. Kupka.—p. 733.
Small Intestinal Enema. R. Schatzki.—p. 743.
Ulcer in Descending Duodenum. C. N. Borman.—p. 752.
Gaucher's Disease. S. Levine and L. Solis-Cohen.—p. 765.
Ruptured Ligaments of Ankle: Roentgen Sign. R. P. Ball and E. W. Egbert.—p. 770.
Abnormal Pulmonary Physiology as Result of Chronic Irradiation Pleuropulmonitis: Preliminary Report. J. E. Leach.—p. 772.
Use of Roentgen Ray in Scientific Examination of Paintings. W. J. Ellictt.—p. 779.
Treatment of Asthma with Roentgen Ray. I. I. Kaplan and S. Rubenfeld.—p. 791.
Spontaneous Rib Fractures Following Irradiation for Cancer of Breast. A. B. Friedmann.—p. 797.
Specific Action of Polonium on Lymphatic System as Shown in Adrenalectomized Animals. C. P. Leblond and A. Lacassagne.—p. 801.
Measurements on Roentgen Ray Production and Absorption in Range 0.7 to 2.5 Megavolts. L. C. Van Atta, A. A. Petrauskas and F. E. Myers.—p. 803.

Roentgenographic Aspects of Pulmonary Cavity Aspiration.—Oechsli and Kupka describe the roentgenologic aspects in 17 cases of pulmonary tuberculosis in which Monaldi's method of aspiration was used. All but two cavities were of the balloon type, and the most prompt results were obtained in these cases. The results in two type 3 cavities with probably caseous walls were slow and poor. Behavior of the cavity wall in some patients appears to substantiate Monaldi's contention that the cavity wall in many instances is partially made up of compressed, airless alveoli, rather than pathologic material. An increase in dense shadowing over the part of the lung containing the cavity, noted by others using this method, appears to be due in part to localized pleural changes which may be associated with the high negative pressure produced in the cavity by this treatment. The state of the tract occupied by the catheter is best determined by body section roentgenography. This method of examination is also a prime requisite to determination of cavity closure.

Annals of Internal Medicine, Lancaster, Pa.

19:829-1076 (Dec.) 1943

*Thiocyanate Goiter in Man. R. W. Rawson, S. Hertz and J. H. Means.—p. 829.
Acute Lupus Erythematosus Disseminatus. H. E. Cluxton Jr. and L. A. M. Krause.—p. 843.
Relation of Emotions to Injury and Disease: Call for Forensic Psychosomatic Medicine. H. W. Smith and S. Cobb.—p. 873.
Intracranial Aneurysms—Report of 36 Cases. N. Mitchell and A. Angrist.—p. 909.
Diagnostic QRS Patterns in Myocardial Infarction. M. M. Hurwitz, R. Langendorf and L. N. Katz.—p. 924.
Myoepithelial Hamartoma of Gastrointestinal Tract (Clarke). N. Mitchell and A. Angrist.—p. 952.
Cultivation of Physiologic Relaxation. E. Jacobson.—p. 965.
Perforation of Interventricular Septum Following Infarction; Intravitam Diagnosis: Report of Case and Survey of Literature. M. L. Weber. —p. 973.
*Amyloidosis Complicating Tuberculosis—Diagnosis, Prognosis and Treatment. S. Cohen.—p. 990.

Thiocyanate Goiter in Man.—Rawson and his associates direct attention to the goitrogenic effect of cabbage and other brassica plants and to the fact that the sulfonamides and thiourea-like compounds act as goitrogens. With the advocated use of soy beans in the modern diet, the liberal prescribing of the sulfonamides in clinical medicine and with widespread use of thiocyanate in treating hypertension, it becomes of practical importance to know whether such agents have any goitrogenic action in man. The authors report the development of goiter in 2 patients who received potassium thiocyanate for hypertension. A similar case was seen in consultation, and several were cited from the literature. Thiocyanate goiter is characterized by (*a*) hyperplasia of the thyroid, (*b*) symptoms of hypothyroidism, (*c*) exophthalmos (seen in 1 case), (*d*) low basal metabolic rate, (*e*) low blood iodine, (*f*) decreased urinary excretion of labeled iodine and (*g*) increased urinary excretion of thyrotropic hormone in the inactivated form. The theory is advanced that this drug blocks the formation of thyroid hormone by the thyroid and that the consequent lowering of concentration of active thyroid hormone in the blood stream causes stimulation of the anterior pituitary to produce an excess of thyrotropic hormone. This in turn causes thyroid hyperplasia but, because of the block, no increase in physiologically active thyroid hormone output. It is a hyperplasia of frustration. An excess of administered iodine may force the block and cause liberation of active hormone. Administration of thyroid bypasses the block and relieves the situation by substitution. Thiocyanate goiter can probably be prevented by prophylactic doses of iodine. Thiocyanate goiter can be relieved by the administration of thyroid even when thiocyanate administration for hypertension is continued.

Amyloidosis Complicating Tuberculosis.—Amyloidosis is a common complication of tuberculosis. Postmortem examinations of 143 patients with tuberculosis revealed amyloidosis in 53, or 39 per cent. This report is based on the 53 cases and on 26 patients with clinical evidence of amyloidosis and 100 per cent absorption of congo red in the Bennhold test. One hundred per cent absorption of the dye by the tissues within one hour is indicative of amyloidosis. A negative congo red test does not exclude amyloid disease. Albuminuria and casts antedated 100 per cent congo red retention in about one third of a group of 37 cases. Urine analyses in 143 tuberculous cases revealed that about 75 per cent of those who spilled albumin plus casts had amyloidosis. This is emphasized as a diagnostic criterion. Charts are presented in an attempt to visualize the prognosis of 58 tuberculous patients with amyloidosis, using the urinary aspects as connoting the probable onset of amyloidosis.

Almost 90 per cent were dead within two years after the development of amyloidosis. The nature of the underlying tuberculous lesion greatly influences the span of life in the amyloid phase. The oral therapy was a high protein diet, iron and diluted hydrochloric acid. Twenty-three also received parenteral therapy, which was chiefly liver extract. Objective improvement in the amyloid status was found in 4 patients who had arrested tuberculous disease. Adequate control of tuberculosis was probably the chief factor in the improvement. There was no evidence of anatomic regression of amyloidosis in 5 cases that came to necropsy.

Archives of Pathology, Chicago

37:1-82 (Jan.) 1944

*Rheumatic Pneumonia. K. T. Neubuerger, E. F. Geever and E. K. Rutledge.—p. 1.
Cholesterol Lysis in Atheroma. T. Leary.—p. 16.
Eosinophilia of Spleen Associated with Sudden Death. A. C. Allen.—p. 20.
Cancerous Mixed Tumor of Urinary Bladder. E. F. Hirsch and G. W. Gasser.—p. 24.
Development of Cardiac Lesions in Thiamine-Deficient Rats. L. L. Ashburn and J. V. Lowry.—p. 27.
Relation of Postmortem Interval to Synthesis of Glycogen from Dextrose by Surviving Liver. J. A. Saxton Jr. and Mary L. Miller.—p. 34.
Effect of Estrogens on Testis in Hepatic Insufficiency. T. G. Morrione.—p. 39
Similarity of Acid-Fast Pigment Ceroid and Oxidized Unsaturated Fat. K. M. Endicott.—p. 49.
Unusual Cardiac Lesions Associated with Chronic Multiple Rheumatoid Arthritis. A. H. Baggenstoss and E. F. Rosenberg.—p. 54.
Genesis of Multinucleated Giant Cells in Lymphatic Tissue of Appendix in Measles. R. M. Mulligan.—p. 61.

Rheumatic Pneumonia.—Neuberger and his co-workers made pathologic studies on 63 consecutive cases of active and quiescent rheumatic fever in Denver. There were 8 cases of pulmonary inflammation which showed peculiar granulomas in the alveolar ducts and alveoli, focal alveolitis with necrosis, fibrinous exudation and hyaline lining membranes, arteriolitis, mononuclear cell exudation and septal cell proliferation. The term "Masson body" is suggested for the rheumatic pulmonary granuloma, which is considered to be an equivalent of the Aschoff body in the heart. Canadian authors expressed the opinion that the rheumatic involvement of the lungs they observed was related possibly to environmental conditions peculiar to Montreal. The studies of Neuberger and his co-workers indicate that the same type of rheumatic pulmonary change occurs elsewhere. It is of interest in this regard that Colorado has a high incidence of rheumatic fever. This is contradictory to the opinion that high altitude and dry, sunny climate, which prevail in Colorado, protect against rheumatic infection.

Bulletin of Johns Hopkins Hospital, Baltimore

73:401-496 (Dec.) 1943

Mucormycosis of Central Nervous System: Report of 3 Cases. J. E. Gregory, A. Golden and W. Haymaker.—p. 405.
Distribution of Certain Oxidative Enzymes in Ciliary Body. J. S. Friedenwald, H. Herrmann and R. Moses.—p. 421.
*Salicylate Therapy in Rheumatic Fever: Rational Technic. A. F. Coburn.—p. 435.
*Anaphylactic Nature of Rheumatic Pneumonitis. A. R. Rich and J. E. Gregory.—p. 465.
Sodium Proprionate in Treatment of Superficial Fungous Infections. E. L. Keeney and E. N. Broyles.—p. 479.

Salicylate Therapy in Rheumatic Fever.—Coburn attempted to determine whether or not salicylate modifies the inflammatory reaction which characterizes activity of the rheumatic process, to identify the active salicylate fraction and to develop a rational technic for the treatment of the rheumatic attack. He describes a simple method for the determination of the salicyl radical in oxalated blood and presents data on plasma salicylate levels in relation to dosage of sodium salicylate in rheumatic fever. Observations on the relation of rheumatic activity to the plasma salicylate level show that 20 patients maintained at 359 to 400 micrograms per cubic centimeter manifested a prompt and progressive subsidence of rheumatic inflammation and that 20 other patients with plasma levels below 250 micrograms per cubic centimeter continued to manifest an active inflammatory process. The intravenous administration of sodium salicylate is required to obtain a rapid rise in the plasma concentration of salicylate to 400 micrograms per cubic centimeter or higher. A therapeutic technic for the use first of intravenous and later of oral salicylate is suggested for the rapid development and maintenance of plasma salicylate levels above 350 micrograms. The results of two years' experience with this technic show that none of 38 rheumatic patients treated with 10 Gm. of sodium salicylate daily developed valvular heart disease and that 21 out of 63 similar patients who received only small doses of sodium salicylate developed physical signs of heart disease. The observations suggest that a plasma salicylate level of at least 350 micrograms per cubic centimeter may be required to suppress the rheumatic reaction and that plasma levels below 200 micrograms per cubic centimeter may be sufficient to relieve symptoms while masking a progressive inflammatory process.

Anaphylactic Nature of Rheumatic Pneumonitis.—Rich and Gregory demonstrated that cardiac and arterial lesions having the basic characteristics of those of acute rheumatic fever can be produced experimentally as a result of anaphylactic hypersensitivity. The comparison of the peculiar lesion of rheumatic pneumonitis with that of the pneumonitis caused by sulfonamide hypersensitivity shows that the two are basically identical, and that both exhibit the primary capillary damage characteristic of focal anaphylactic reactions. This provides additional evidence in support of the view that the lesions of acute rheumatic fever may be anaphylactic in origin.

California and Western Medicine, San Francisco

59:301-352 (Dec.) 1943

Medical Practice of the Future: As a Medical Administrator Views It. A. J. J. Rourke.—p. 308.
Medical Practice: Its Evolution. M. Fishbein.—p. 316.
Observations of a Medical Officer in South Pacific Area. F. G. Crandall Jr.—p. 319.

Connecticut State Medical Journal, Hartford

8:3-68 (Jan.) 1944

Medicine in Wartime Industries. G. H. Gehrmann.—p. 3.
Tuberculosis as an Economic and Social Problem. R. E. Plunkett.—p. 9.
Demerol: New Synthetic Analgesic: Its Indications as Substitute for Morphine. R. C. Batterman.—p. 13.
Wagner Bill. M. M. Davis.—p. 18.
My Reasons for Favoring Wagner-Murray-Dingell Bill. R. J. Watt.—p. 20.
. . . To Be Included. K. Roberts.—p. 23.
New York Physician Speaks. L. D. Redway.—p. 25

Endocrinology, Springfield, Ill.

33:333-416 (Dec.) 1943

Inactivation of Stilbestrol by Liver in Vitro. B. Zondek, F. Sulman and J. Sklow.—p. 333.
Hormone Factors in Male Behavior of Female Rat. R. Koster.—p. 337.
Decreased Phosphorus Appetite of Parathyroidectomized Rats. C. P. Richter and Sylvia Helfrick.—p. 349.
Reproductive Capacity in Adult Male Rats Treated Prepuberally with Androgenic Hormone. J. G. Wilson and Harriet C. Wilson.—p. 353.
Resistance of Rats to Potassium Poisoning After Administration of Thyroid or of Desoxycorticosterone Acetate. B. E. Lowenstein and R. L. Zwemer.—p. 361.
Effects of Low Atmospheric Pressures on Activity of Thyroid, Reproductive System and Anterior Lobe of Pituitary in Rat. A. S. Gordon, F. J. Tornetta, S. A. D'Angelo and H. A. Charipper.—p. 366.
Observations on Fluorescence, Birefringence and Histochemistry of Rat Ovary During Reproductive Cycle. E. W. Dempsey and D. L. Bassett.—p. 384.

Journal Industrial Hygiene & Toxicology, Baltimore

25:423-460 (Dec.) 1943

Intracellular Penetration of Bromide as Feature in Toxicity of Alkyl Bromides. D. P. Miller and H. W. Haggard.—p. 423.
*Effect of Wet Garments on Body Weight Loss at High Environmental Temperatures. N. Lifson and M. B. Visscher.—p. 434.
Analysis of Atmospheric Contaminants Containing Nitrate Groupings. H. Yagoda and F. H. Goldman.—p. 440.
Lead Exposures at Government Printing Office. A. D. Brandt and G. S. Reichenbach.—p. 445.
Brucellosis in Packing House Workers. M. G. Levine.—p. 451.

Wet Garments at High Environmental Temperatures.—According to Lifson and Visscher the practice of wearing clothing wet with water by workmen in especially hot situations, such as furnace rooms and foundries, is one which has been

employed empirically for a long time. Studies were made on 11 white males of ages from 18 to 25 years. The garments used were either long sleeved, long legged, 50 per cent wool and 50 per cent cotton underwear weighing 480 Gm. or regulation army coveralls weighing about 1,350 Gm. The garments were immersed in tap water and manually squeezed until a small amount of dripping continued. With this procedure the underwear suit took up about 1,250 Gm. of water, and the army coverall about 1,750 Gm. of water. The authors observed the effects of wetting the clothing on weight loss, rectal temperature and pulse rate. At 110 F. with relative humidities up to 25 per cent and wind velocity of 25 feet per minute the mean hourly weight conservation attributable to the wet clothing was 174 Gm. at rest, 309 Gm. at work. Above a relative humidity of 35 per cent this effect is absent. At 97 F., relative humidity of 67 per cent and wind velocity of 50 feet per minute the average hourly weight conservation attributable to the wet clothing was 76 Gm. at rest and 94 Gm. at work. No effect on rectal temperatures attributable to the wet clothing was demonstrated. At 110 F., relative humidities up to 25 per cent and wind velocity of 25 feet per minute the average pulse rate was 11 beats per minute lower at rest in the wet garments than in the nude. Subject preference for the wet garments was, in general, proportional to their weight conservation effect.

Journal of Nutrition, Philadelphia

26:549-700 (Dec. 10) 1943

Effect of Diet on Vitamin A Content of Bovine Fetal Liver. W. Braun and B. N. Carle.—p. 549.
Prophylactic Requirement of Rat for Alpha Tocopherol. H. M. Evans and Gladys A. Emerson.—p. 555.
Influence of Nutrition During Pregnancy on Condition of Infant at Birth. Bertha S. Burke, Virginia A. Beal, Samuel B. Kirkwood and H. C. Stuart.—p. 569.
Effects of Cecectomy, Succinylsulfathiazole and p-Aminobenzoic Acid on Vitamin K Synthesis in Intestinal Tract of Rats. H. G. Day, K. G. Wakim, M. M. Krider and E. E. O'Banion.—p. 585.
*Further Studies on Comparative Value of Butter Fat, Vegetable Oils and Oleomargarines. R. K. Boutwell, R. P. Geyer, C. A. Elvehjem and E. B. Hart.—p. 601.
Effect of High Temperature and B Vitamin Levels of Diet on Metabolism and Body Composition of Rats. H. P. Sarett and W. A. Perlzweig.—p. 611.
*Retention of Vitamins in Veal and Lamb During Cooking. J. M. McIntire, B. S. Schweigert and C. A. Elvehjem.—p. 621.
Utilization of Sulfur Amino Acids by the Chick. C. R. Grau and H. J. Almquist.—p. 631.
Comparative Toxicity of Calciferol, A. T. 10 and Cod Liver Oil Concentrate for Chicks. J. T. Correll and E. C. Wise.—p. 641.
Carotene Requirements for Maintenance of Normal Spinal Fluid Pressure in Dairy Calves. L. A. Moore, M. H. Berry and J. F. Sykes.—p. 649.
Influence of Increasing Doses of Thiamine and Riboflavin on Efficiency of Their Utilization. B. Sure and Z. W. Ford Jr.—p. 659.
Studies on Carotenoid Metabolism: IV. Effect of Vitamin A Intake on Carotenoid and Vitamin A Content of Eggs, Liver, Blood and Body Fat of Hens. H. J. Deuel Jr., M. Caroline Hrubetz, F. H. Mattson, Margaret G. Morehouse and A. Richardson, with the technical assistance of Jeanette Gow.—p. 673.

Butter Fat, Vegetable Oils and Oleomargarines.—Boutwell and his collaborators show that, with lactose as the sole carbohydrate in the diet, rats showed superior growth when fed butter fat or lard as compared to corn oil, coconut oil, cottonseed oil, soybean oil, peanut oil, olive oil and hydrogenated cottonseed oil. With a mixture of carbohydrates composed of sucrose, starch, dextrose, dextrin and lactose in the diet, the average growth response of the animals fed vegetable oils was equal to that of the animals fed butter fat and lard. The growth rate on this ration was more rapid than when all of the carbohydrate was present as lactose. Properly fortified oleomargarine fats gave growth equal to butter fat over a period of six weeks when the mixture of carbohydrates was incorporated in the rations. Properly fortified oleomargarines did not give growth equal to butter fat when lactose was the sole carbohydrate in the diet. On such a regimen rats fed butter fat grew slightly better than rats fed oleomargarines of animal origin but decidedly better than rats fed oleomargarine of vegetable origin.

Vitamins in Veal and Lamb During Cooking.—McIntire and his co-workers studied the vitamin retention in veal and lamb after various methods of cooking. The retention in the meat alone after roasting and broiling averaged 57 and 70 per cent for thiamine, 82 per cent for riboflavin and 80 per cent for nicotinic acid. The retention after the braising of veal averaged 40 per cent for thiamine, 73 per cent for riboflavin and 61 per cent for nicotinic acid. The retention after stewing averaged 26 per cent for thiamine, 66 per cent for riboflavin and 52 per cent for nicotinic acid. The average total thiamine retention in the meat plus drippings was 62 per cent after roasting and braising, 80 per cent after broiling and only 51 per cent after stewing. The average total retention after the various cooking methods ranged from 87 to 101 per cent for riboflavin and 92 to 100 per cent for nicotinic acid. The average thiamine value was 1.7 micrograms per gram of fresh lamb and 1.74 micrograms per gram of veal. The average riboflavin value was 2.8 micrograms per gram for lamb and 3.15 micrograms per gram for veal, and the average nicotinic acid value for lamb was 58 micrograms per gram and for veal was 67 micrograms per gram.

Journal of Thoracic Surgery, St. Louis

12:697-772 (Dec.) 1943

Postoperative Pain Following Total Pneumonectomy: I. Its Relationship to Postoperative Care and to Certain Postoperative Complications. J. Johnson.—p. 697.
II.: Its Prevention by Crushing the Intercostal Nerves at Time of Operation. J. Johnson.—p. 702.
Nonsyphilitic Aneurysm of Aorta in Individuals Under 45 Years of Age. M. F. Steinberg, A. Grishman and M. L. Sussman.—p. 704.
Obstructive Emphysema and Atelectasis in Same Lung Resulting from Bronchogenic Carcinoma. A. G. Cohen.—p. 714.
*Aneurysm of Ductus Botalli as Surgical Problem: Review of Literature and Report of Additional Case Diagnosed Before Operation. S. Mackler and E. A Graham.—p. 719.
*Total Pneumonectomy for Metastatic Uterine Carcinoma. P. S. Brezina and G. E. Lindskog.—p. 728.
Morphology of Primary Carcinoma of Human Lung: Summary and Discussion of Pathologic Anatomy in 45 Cases. R. M. Mulligan and F. R. Harper.—p. 734.
Thoracoscopic Removal from Chest of Broken Anesthetic Needle: Case Report. R. A. S. Cory.—p. 753.
Lead Buttons for Intrapulmonary Localization. E. F. Skinner.—p. 754.

Aneurysm of Ductus Botalli as Surgical Problems.—According to Mackler and Graham, aneurysm of the ductus arteriosus is a rare disease of the mediastinum occurring so infrequently that its existence is commonly ignored in a discussion of mediastinal tumors. The occurrence of this uncommon defect in 3 cases at the Barnes Hospital induced the authors to evaluate aneurysms of the ductus arteriosus in relationship to mediastinal tumors. In a previous communication Graham reported 2 cases in which aneurysm of this structure was encountered during mediastinal exploration of tumor. In the case reported here, the diagnosis of aneurysm of a patent ductus arteriosus was made in a man aged 23 because of many features in common with the 2 cases previously reported. An exploration was deemed advisable because a positive diagnosis could not be made and it was feared that a mediastinal tumor might be overlooked. Incontrovertible evidence that this was a ductus arteriosus aneurysm was not possible at the operating table. Because of the anatomic location of the aneurysm, it was felt that its origin in the ductus arteriosus was most probable. Diagnosis of aneurysm of the ductus arteriosus is based almost exclusively on x-ray examination. The rounded mediastinal shadow of the aneurysm occupies a characteristic location in the region of the conus arteriosus, dislocating the trachea to the right of the midline. In the lateral view the tumor lies for the most part posterior to the trachea. Its position, nevertheless, is not completely within the posterior mediastinum. A rim of calcification at the periphery of the tumor is additional evidence, but such calcification may be present in other tumors, which, however, may be differentiated by their location.

Total Pneumonectomy for Metastatic Uterine Carcinoma.—Brezina and Lindskog report that a woman aged 65 was submitted to right total pneumonectomy for a discrete tumor of the right upper lobe. A subtotal hysterectomy and bilateral salpingo-oophorectomy had been performed thirteen years previously for vaginal bleeding and gross diagnosis of uterine carcinoma. Recent cough and blood-tinged sputum caused the patient to seek medical help. The patient recovered from the operative procedure. The removed lung showed a solitary metastasis of uterine adenocarcinoma.

Journal of Urology, Baltimore

50:641-794 (Dec.) 1943

Renal Lesions Within the Draft Age. C. L. Deming.—p. 641.
Hypertension of Renal Origin as Observed at Operation on Single Kidney. H. G. Bugbee.—p. 647.
Occurrence of Endometrial Tissue in Kidney: Case Report and Discussion. V. F. Marshall.—p. 652.
Transplantation of Ureters into Rectosigmoid in Infants: Review of 19 Cases. C. C. Higgins.—p. 657.
Looped Catheter in Treatment of Ureteral Calculi. V. A. Balkus.—p. 667.
Natural Color Intravesical Photography. L. E. McCrea.—p. 673.
Benign Hypertrophy of Prostate: Morphologic Study. R. A. Moore.—p. 680.
*Clinical and Pathologic Effects of Diethylstilbestrol and Diethylstilbestrol Dipropionate on Carcinoma of Prostate Gland: Continuing Study. P. J. Kahle, J. R. Schenken and E. L. Burns.—p. 711.
Malignancy of Epididymis, with Report of Case of Teratoma of Epididymis. E. G. Crabtree.—p. 733.
Stenosis of External Urethral Meatus. M. F. Campbell.—p. 740.
Complete Urethral Occlusion in Living Newborn: Report of 5 Cases. R. L. Dourmashkin.—p. 747.
*Adrenal Heterotopia, Rests, and the So-Called Grawitz Tumor. C. R. O'Crowley and H. S. Martland.—p. 756.
Twelve Year Survival with One Half of One Kidney. G. F. McKim, P. G. Smith and T. W. Rush.—p. 769.
Stone in Lower Third of Ureter, with Report of an Instance of an Incarcerated Basket. W. N. Wishard Jr.—p. 775.
Incarcerated Inguinal Hernia Containing Cancer of Bladder. G. D. Oppenheimer.—p. 784.
Spermia Transport in Man. R. L. Brown.—p. 786.

Diethylstilbestrol and Diethylstilbestrol Dipropionate in Prostatic Carcinoma.—Kahle and his associates report 7 cases of adenocarcinoma of the prostate, 6 proved by biopsy, which have been treated with diethylstilbestrol or diethylstilbestrol dipropionate since March 1940. These cases were reported in detail in February 1942, and 5 cases which could be followed are brought up to date in this communication. In 4 cases the improvement previously reported in the general health, relief of symptoms and local findings has continued to date. The fifth patient died of urinary sepsis and cardiac failure. In all 5 cases, including the fatal case, serial microscopic examination showed regression in the carcinomatous tissues. There was a regression of metastatic osseous lesions as demonstrated by serial roentgenologic examination in the single case in which such lesions were present and a regression of metastases to the lymph nodes in another instance. Massive doses of diethylstilbestrol and diethylstilbestrol dipropionate were used without ill effects except for transient gynecomastia in a single instance. In 1 patient who presented an apparent recurrence of the carcinomatous process a second course of treatment was as effective as the first in controlling symptoms and causing a regression of the neoplasm. The changes observed in stilbestrol treated carcinomas of the prostate, as compared to untreated carcinoma, are as follows: 1. In the untreated specimen the neoplastic cells present large vesicular nuclei, prominent nucleoli and granular, reticular cytoplasm. 2. In the first stage of regression there is a decrease in the size of the nuclei associated with condensation of the nuclear chromatin. Nucleoli are no longer visible, and mitoses are absent. Cytoplasmic vacuoles appear and are located predominantly at the bases of the cells. 3. In the second stage of regression the nuclei are pyknotic. The cytoplasm is practically clear and the cell membranes have ruptured, with resulting coalescence of vacuoles. With the rupture of all the cell membranes, the pyknotic nuclei and the fragments of the membranes are clustered in the centers of the acinar spaces. 4. In the next stage of regression, clear acinar spaces contain only remnants of pyknotic nuclei. 5. In the final stage only stroma, consisting of smooth muscle and fibrous tissue, remains. Accumulations of lymphocytes and macrophages and deposits of brown pigment are present in some parts of the stroma.

Adrenal Heterotopia, Rests and the So-Called Grawitz Tumor.—O'Crowley and Martland encountered adrenal-renal heterotopia with the adrenal glands (complete heterotopia) or a considerable portion of them (partial heterotopia) beneath the capsule of the kidneys and with no adrenals in their normal position eight times in the routine examination of 5,000 consecutive bodies. The explanation of this anomaly, which in their experience is always bilateral, is unknown. As the renal capsule is said to be completed at a time in early fetal life when the adrenal cortex is far distant, it would seem that a mechanical displacement is impossible. It suggests that either embryologic data are incomplete, that exceptions occur or that pluripotent cells exist which can form either renal parenchyma or adrenal cortex. Contrary to some authorities, this anomaly seems to have no effect on the life of the individual. It neither shortens life nor predisposes to infections, tuberculosis or debilitating diseases. No endocrine disturbances were observed. The recorded high incidence of status lymphaticus with this anomaly is not borne out in the cases seen by the authors. In adrenal-renal heterotopia the surgeon in performing a nephrectomy would unwittingly remove the adrenal. The authors have never heard, however, that this has been done. Since the heterotopic adrenals are hypoplastic and, in addition, contain no medulla (or scant medulla in extracapsular portions only) such an operation might cause symptoms suggesting adrenal insufficiency. The demonstration that the entire adrenal cortex, or large portions of it, may be found beneath the renal capsule remaining on the kidney after decapsulation, and the finding in some of these cases of many small, isolated bits of cortical tissue near these subcapsular adrenals, but scattered over the surface of the kidney, greatly strengthens the opinion held by many pathologists that the so-called adrenal rests are cortical adrenal tissue which have become misplaced during development. It is reasonable to assume, therefore, that some renal hypernephromas may arise from such misplaced cortical adrenal tissue.

Kentucky Medical Journal, Bowling Green

42:1-30 (Jan.) 1944

Endometriosis of Sigmoid Causing Intestinal Obstruction: Report of 2 Cases. J. B. Lukins and L. Lukins.—p. 4.
100 Cases of Epidemic Meningitis, Diagnosis and Treatment. K. Glaser.—p. 5.
Current Trends in Military Surgery. F. W. Rankin.—p. 11.
Use of Whole Blood, Blood Plasma, Blood Derivatives and Blood Substitutes. R. R. Kracke and W. R. Platt.—p. 15.
Blood and Lymph. W. E. McWilliams.—p. 23.

New England Journal of Medicine, Boston

229:959-985 (Dec. 23) 1943

Relation of Physical Therapy to Arthritis. W. B. Snow.—p. 959.
Coexisting Intrauterine and Extrauterine Pregnancies: Review with Report of Case. S. J. King.—p. 965.
*New Method of Giving Potassium Iodide. W. T. Garfield.—p. 971.
Urology. W. C. Quinby.—p. 972.

New Method of Giving Potassium Iodide.—Garfield describes the use of potassium iodide in the form of enteric coated pills. The enteric coating on these tablets does not dissolve until it comes in contact with the bile in the intestinal tract; it is insoluble in alkaline or acid solutions alone. The enteric coated pill was given in 12 cases of syphilis in varying amounts. The 12 patients responded well, and none complained of a gastric upset. Three patients evidenced idiosyncrasies to the drug. In view of the lack of gastric disturbances and the accuracy of dosage, further trial of this method of administering potassium iodide is recommended.

New York State Journal of Medicine, New York

44:1-112 (Jan. 1) 1944

Treatment of Arterial Embolism of Extremities—A Three-Phase Division. F. S. Wetherell.—p. 35.
Technical Precision in Thyroid Surgery. C. G. Heyd.—p. 43.
Subastragaloid Dislocations, with Report of 2 Cases of Dislocation of Subastragaloid Joint and Fracture of Os Calcis, 1 of Which Was Compounded. M. C. O'Shea.—p. 49.
Nutrition of Industrial Worker in United States and Abroad. R. A. Gortner Jr.—p. 56.
Scientific Basis for Recommended Dietary Allowances. Lydia J. Roberts.—p. 59.
Problems in Early Treatment of Poliomyelitis. J. Wright.—p. 67.
Second Report on Rocky Mountain Spotted Fever in New York State Exclusive of New York City. E. R. Maillard and E. L. Hazen.—p. 73.

Pennsylvania Medical Journal, Harrisburg

47:321-416 (Jan.) 1944

Continuous Caudal Analgesia: A Step Forward in Conquest of Pain of Childbirth. R. A. Hingson and W. B. Edwards.—p. 335.
Conservative Plastic Operations on Kidney. L. F. Milliken.—p. 341.
Management of Bilateral Ureteral Obstruction. T. R. Fetter.—p. 345.
Diversion of Urinary Stream by Cutaneous Ureterostomy. L. B. Greene.—p. 356.
Menopausal Management: Further Report on Diethylstilbestrol. J. A. Hepp.—p. 363.
Use of Histaminase in Prophylactic Tetanus Antitoxin Reactions. S. A. Eger and J. E. Stone.—p. 371.

Southern Medical Journal, Birmingham, Ala.

37:1-62 (Jan.) 1944

*Amputation with Refrigeration Anesthesia. F. M. Massie.—p. 1.
Care of Battle Casualties and Casual Sick. N. T. Kirk.—p. 6.
Students' Army Specialized Training Program in Action. E. H. Perry.—p. 8.
Postgraduate Training in Army Air Forces Hospitals. J. R. McDowell.—p. 10.
Future of American Medicine. J. E. Paullin.—p. 12.
Otitis Media Still Takes Its Toll. W. Dean.—p. 17.
General Aspects of Acute Surgical Infections of Kidney. A. D. Munger.—p. 20.
Surgical Treatment of Cancer of Body of Uterus in Obese. L. W. Frank.—p. 24.
Treatment of Morphine Abstinence Syndrome with Synthetic Cannabis-like Compound. C. K. Himmelsbach.—p. 26.
Ten Years of Observing the Underprivileged Child. G. H. Gregory.—p. 29.
Allergy to Liver Extract. H. T. Engelhardt and V. J. Derves.—p. 31.
Free Diet in Juvenile Diabetes. J. W. Bruce.—p. 34.
Lacquer Dermatitis. H. Hailey.—p. 37.

Amputation with Refrigeration Anesthesia.—Massie states that with refrigeration, not freezing, tourniquets may safely be left on for many hours. Anesthesia produced by the combination of tourniquet and low temperature of the ice pack is complete. There is no shock during or following the amputation. Infection is completely controlled in the postamputation stumps by continued cold packs, though there is experimental evidence that the tissues may be more susceptible to infection after the temperature is restored to normal. The experimental and clinical evidence emphasize the menace of applying heat to tissue with a reduced and inelastic blood supply. The author used the refrigeration anesthesia in 14 cases chiefly for amputations for diabetic and peripheral vascular lesions. The mortality for such amputations was formerly as high as 65 per cent. The ice and ligation method reduced this to 15.5 per cent in 45 patients who underwent 62 operations. The mortality for thigh amputations in this series was 13.3 per cent.

Surgery, Gynecology and Obstetrics, Chicago

77:561-678 (Dec.) 1943

High Altitude Frostbite: Preliminary Report. L. Davis, J. E. Scarff, N. Rogers and M. Dickinson.—p. 561.
Primary Endometriosis of Cervix Uteri. A. F. Lash and H. Rappaport.—p. 576.
One Stage Pancreatoduodenectomy. A. Brunschwig.—p. 581.
Reimplantation of Ureter into Bladder: Report of Method Applied to 10 Patients. A. R. Stevens and V. F. Marshall.—p. 585.
New Type of Bone Plate and Screws. K. Townsend and C. Gilfillan.—p. 595.
*Treatment of Intertrochanteric Fractures of Femur with Hanging Cast. M. D. Johnson.—p. 598.
Traumatic Wounds of Abdomen. R. A. Griswold.—p. 601.
Observations on Transudate in Intestinal Strangulation: I. Effect of Adrenal Cortical Extract on Its Toxicity. H. Laufman and S. C. Freed.—p. 605.
*Dermatome Pattern Graft and Its Use in Reconstruction of Hands. F. E. Kanthak.—p. 610.
Esophagobronchial Fistula. L. H. Clerf, E. E. Cooley and J. J. O'Keefe.—p. 615.
Face and Persistent Brow Presentations. A. C. Posner and I. M. Buch.—p. 618.
One Aspect of Posttraumatic Syndrome in Craniocerebral Injuries. K. G. McKenzie.—p. 631.
Value of Stone Dissolving Agent, Solution G, in Treatment of Alkaline Incrustations of Bladder Lesions. C. C. Herger, H. R. Sauer and E. Neter.—p. 634.
Polypoid Lesions of Colon of Children. R. L. J. Kennedy, C. F. Dixon and H. M. Weber.—p. 639.
Use of Methedrine in Surgical Operations: Clinical Study on an Effective Pressor Drug. H. Dodd and F. Prescott.—p. 645.
Relief of Essential Dysmenorrhea with Ethinyl Estradiol. R. A. Lyon.—p. 657.
Perforation of Gallbladder: Study of 25 Consecutive Cases. L. L. Cowley and H. N. Harkins.—p. 661.
Volvulus of Sigmoid Colon: Discussion of Combined Volvulus and Hepatodiaphragmatic Interposition. J. G. Probstein and H. R. Senturia.—p. 669.

Treatment of Intertrochanteric Fractures of Femur.—Johnson states that analysis of the causes of death in patients with intertrochanteric fracture of the femur at St. Louis City Hospital revealed that pneumonia accounted for from 39 to 53.4 per cent of the fatalities. Decubitus ulcers have always been a major problem in the care of these patients. To overcome some of these complications, the use of a hanging cast has been tried. In 50 cases treated by this method the mortality rate has been reduced from 39.3 to 18 per cent and the duration of hospitalization from 84.7 days to 62.3 days. In order to prevent pressure sores and peroneal nerve paralysis with accompanying foot drop a Steinmann pin is inserted through the distal end of the femur and incorporated in the cast. No local infection of soft tissues or bone injury has resulted from the Steinmann pin. The cast is applied with the knee in 30 to 40 degrees of flexion. As soon as the plaster is sufficiently hardened, from 20 to 35 pounds of traction is applied through an overhead pulley at the foot of the bed. The line of traction is similar to that used in a Hodgen splint. The traction is used only while the patient is in bed, the weight of the cast acting as traction while the patient is in a wheel chair or up on crutches. One to three days after the application of the cast, each patient is placed in a wheel chair for two to six hours daily. The casts were removed after an average of 43.4 days. Complications, such as pneumonia, decubitus ulcers, stiffness of knees and ankles and weakness from lying in bed, were less frequent. The reductions have been as good as the reductions obtained by other methods. There were no instances of nonunion.

Dermatome Pattern Graft in Reconstruction of Hands.—For the reconstruction of injuries to the cutaneous covering of the hands the free skin transplant holds advantages over the prolonged pedicle flap operations. The introduction of the dermatome has resulted in a method of obtaining uniformly large grafts of a predetermined thickness with sharp straight edges, more suitable for smaller reconstructions than the razor graft. Kanthak describes a method of utilizing the dermatome in preparing grafts of a specific pattern for reconstruction of extensive injuries of the hands. This procedure consists in the removal of a split graft with the dermatome, cutting a pattern of the area to be grafted and transferring the pattern to the dermatome drum, where the outline is cut on the drum. The graft is subsequently transferred to the recipient area, where it is sutured and dressed in the customary manner. The method represents a combination of full thickness and split thickness grafting and is especially suitable for large areas of irregular outline. Since the donor site requires no additional surgery for closure as does the full thickness grafting technic, this procedure simplifies the problem of restoring areas of considerable size and complicated design. This method is of value in treating keloidal areas by complete excision and skin grafting.

78:1-112 (Jan.) 1944

Treatment of War Fractures of Femur. S. S. Yudin.—p. 1.
Division of Flexor Tendons Within Digital Sheath. S. L. Koch.—p. 9.
Reestablishment of Esophagogastric Continuity Following Resection of Esophagus for Carcinoma of Middle Third. J. H. Garlock.—p. 23.
Gangrene Complicating Fractures About Knee. J. M. King and B. J. Brewer.—p. 29.
Complete Surgical Division of Patent Ductus Arteriosus: Report of 14 Successful Cases. R. E. Gross.—p. 36.
Importance of Focal Infection in Obstetrics. M. Solis-Cohen.—p. 44.
*Nutritional Deficiency in Etiology of Menorrhagia, Metrorrhagia, Cystic Mastitis and Premenstrual Tension: II. Further Observations on Treatment with Vitamin B Complex. M. S. Biskind, G. R. Biskind and L. H. Biskind.—p. 49.
New Technic for Using Levine Tube in Biliary Intestinal Anastomoses. N. F. Hicken, Q. B. Coray and J. H. Carlquist.—p. 58.
Care of Injured in Combat Zones. B. L. Coley.—p. 66.
Survey Film Diagnosis of Acute Surgical Abdomen. S. Levine and L. Solis-Cohen.—p. 76.
Fresh Fractures of Carpal Scaphoid. B. E. Obletz.—p. 83.
Hermaphroditism. H. F. Bettinger.—p. 91.
Acute Cholecystitis. E. L. Eliason and L. W. Stevens.—p. 98.

Nutritional Deficiency in Etiology of Menorrhagia.—According to the Biskinds the liver of a rat loses its ability to inactivate estrogen in vitamin B complex deficiency. Observations on 104 patients provided evidence that menorrhagia, metrorrhagia, cystic mastitis, premenstrual tension and probably uterine myomas as well are caused by failure of the liver to inactivate estrogen owing to deficiency of factors of the vitamin B complex. Of 39 patients who were observed primarily because of the presence of lesions of nutritional deficiency, 37 had a history of one or more conditions related to excess estrogen. Of 52 patients whose main complaint was one of the latter conditions and who were examined for evidences of nutritional deficiency, every one had signs or symptoms or both characteristic of B avitaminosis. Prompt and often dramatic responses were obtained in the gynecologic conditions with vitamin B complex orally, parenterally or by both routes.

United States Naval Med. Bulletin, Washington, D. C.

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Chemotherapy in Management of Acute Appendicitis. W. L. Berkley and H. C. Watkins.—p. 1.
Intravenous Administration of Anesthetic Agent: Comparison of Technic for Robust Patients and for Patients in Shock. J. S. Lundy, R. C. Adams and T. H. Seldon.—p. 11.
Incidence of Acute Respiratory Infections: Experience of U. S. Navy Since 1881. D. F. Smiley.—p. 17.
*Diagnosis of Influenza and Catarrhal Fever, Acute: Plea for Accurate Diagnosis. A. P. Krueger and others.—p. 27.
Wartime Fractures in Navy. M. B. Coventry and H. B. Macey.—p. 34.
Fractures of Carpal Scaphoid: Study of 10 Cases. H. G. Finn and K. J. Palmberg.—p. 38.
Fractures of Mandible. K. M. Broesamle.—p. 47.
Use of Special Views in Roentgenography of Knee Joint. J. D. Camp and M. B. Coventry.—p. 56.
*Treatment of Burns: Discussion Based on Experience with 360 Cases Seen on Board a U. S. Hospital Ship (concluded). R. A. Kern and others.—p. 59.
*Significance of Joint Pain in Young Adults. J. W. Martin Jr.—p. 83.
Aids to Evaluation of Systolic Heart Murmurs in Selection of Naval Personnel. R. C. Parker Jr. and B. V. White Jr.—p. 87.
Electroencephalographic Diagnosis of Organic Brain Disease. C. G. Hines, L. H. Tenney and J. Hughes.—p. 101.
Paragonimiasis (Endemic Hemoptysis): Report of 3 Cases. J. J. Miller Jr. and D. L. Wilbur.—p. 108.
*Tropical Eosinophilia. K. Emerson Jr.—p. 118.
War Induced Eye Injuries. C. W. Trexler.—p. 124.
Glycosuria with Diabetic Type of Glucose Tolerance Curves in Obese Nondiabetics. H. H. Carroll and T. B. Russell.—p. 132.
Paradoxical Respiration. J. D. Cuono.—p. 136.
Steel Wire Sutures. H. D. Vickers.—p. 140.
Management of Post-Traumatic Epilepsy. J. H. Siris.—p. 144.

Accurate Diagnosis of Influenza and Acute Catarrhal Fever.—There has been a tendency since the 1918-1919 influenza epidemic to use carelessly the diagnostic designation "influenza." A wide variety of febrile respiratory conditions and even many vague gastrointestinal disorders are erroneously termed "the flu." In order to counteract this tendency the Navy introduced into its medical terminology the designation "catarrhal fever, acute" for all forms of influenza-like respiratory conditions. However, catarrhal fever has come to serve as an even more inclusive "catch-all" diagnosis than the term which it was meant to replace. From December 1942 to May 1943 the medical officers of Laboratory Research Unit No. 1 observed several hundred patients with a diagnosis of catarrhal fever, acute, at a large west coast naval dispensary. All these cases could have been given a more specific designation. Included under the diagnosis were found cases of influenza, atypical pneumonia, lobar pneumonia, septic sore throat, acute follicular tonsillitis, acute laryngotracheitis, acute bronchitis, rubella and the common cold, the latter of both afebrile and febrile types. The only cases justifying the nonspecific designation of catarrhal fever were the cases of common cold with fever—the "febrile catarrh" of the English writers. The grouping of such a wide variety of diseases under one heading leads to both diagnostic and therapeutic carelessness. Influenza is not merely nosologically distinct from other respiratory infections but is due to a specific agent, the influenza virus. This virus cannot be isolated from any of the other "catarrhal fever" group of respiratory diseases. The accuracy of the diagnosis of influenza can be put to the test of virus isolation. Influenza may be confused with the febrile type of common cold (acute catarrhal fever or febrile catarrh) and with streptococcic tonsillitis (septic sore throat).

Treatment of Burns on Board a Hospital Ship.—Kern and his co-workers report 360 cases of burns incurred by naval and military personnel. Burns constitute an important group of casualties in naval warfare, and preparedness for their treatment must include a store of supplies and an organized and trained personnel. In order to distribute the working load the treatment of burns should be assigned to the medical and not to the surgical service. Since patients with burns die not of their burns but of shock, toxemia or sepsis, the first step is to prevent or treat these complications. Pressure dressings can prevent to some degree the development of edema as well as reduce an existing edema. Particularly is this true in burns of the extremities over which an elastic bandage can be applied. Shock must be treated by adequate amounts of plasma, the dosage being based on frequent hemoglobin determinations. The use of morphine in the relief of pain calls for an initial dose of not over ½ grain (0.032 Gm.) subsequent doses of not over ¼ grain (0.016 Gm.) and the meticulous recording of each dose given, on a tag attached to the patient. Toxemia is most effectively met by an adequate fluid and salt intake. A prime requisite in guarding against infection of burns is the use of an aseptic technic in dressing, including the masking of attendant personnel. The preparation of the burn area for the local treatment calls for simple cleansing (liquid pertolatum and sterile cotton waste to remove fuel oil; plain soap and water) and a minimal débridement (cutting away blisters). The method of local treatment best suited to naval conditions is one that is applicable to all burns. Tannic acid, paraffin wax and triple dye are not suitable. Tannic acid must not be used on the face, ears or hands. Not one of the methods mentioned is applicable to an infected burn or in the preparation for skin grafting or to a patient with wounds or fractures. Sulfathiazole, either in 3 per cent ointment with a water soluble base or as a dusting powder with wet saline dressings, meets all requirements. Skin grafting should be done early to prevent scar formation. Many burns could be prevented in naval actions by full clothing at battle stations, by the use of antiflash gear that has been fireproofed and by the constant availability of gloves for use in case of fire or sliding down ropes, since burns of the hands are responsible for the longest periods of disability.

Joint Pain in Young Adults.—Martin made a survey of 106 recruits admitted to his hospital with the complaint of joint pain. All were white males between the ages of 17 and 24 years in preliminary naval training. All had passed normal physical examinations not more than three months prior to admission. With the exception of 5, all were examined and studied. Ninety-seven cases (92 per cent) were clinically diagnosed as rheumatic fever. Eighty-five (80 per cent) of the total presented evidence of cardiac damage. Rheumatic fever must be kept continuously in mind in all cases of joint pain in young adults. It must be considered as the causative factor until ruled out by careful observation and cardiographic studies.

Tropical Eosinophilia.—Weingarten described under the term tropical eosinophilia an endemic disease which is apparently widespread in the coastal regions of southern India, 81 cases having been observed by him during five years' practice in Bombay. It is characterized by a chronic paroxysmal cough, frequent attacks of asthmatic breathing, weakness, listlessness, loss of weight and appetite, and leukocytosis ranging from 20,000 to 60,000, apparently due chiefly to an increase in eosinophils. The onset of the disease is gradual with a low grade fever, splenic enlargement, apathy and weight loss. After about a week, hacking paroxysms of coughing begin, usually occurring in the early morning hours and frequently associated with moderately severe asthmatic attacks resembling true asthma in their response to adrenergic drugs. Physical examination at this stage reveals the constant presence of numerous sibilant and sonorous rales throughout the lungs and prolonged expiration. After two to three weeks the fever subsides but the remaining symptoms persist and become chronic, lasting for a period of years if untreated. Emerson reports the history of an ensign aged 30 who developed the typical symptoms of tropical eosinophilia eight months after his return from India. A rapid disappearance of all evidence of the disease followed the oral administration of carbarsone. It seems probable that the man acquired his disease during his stay in India but that it remained latent until his powers of resistance were diminished by a severe intercurrent infection. When he had sufficiently recovered from the more severe symptoms of his liver abscess it became possible to recognize the milder signs of tropical eosinophilia. With increasing contact between the United States and India it is likely that more cases of tropical eosinophilia will turn up in this country. Since little is known of its etiology, epidemiology or total geographic distribution, there is no reason to think that it may not be widespread in tropical climates. In spite of the failure thus far to find an etiologic agent, the remarkable therapeutic effect of arsenic points toward a spirochetal or protozoan infection of some sort.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2:773-804 (Dec. 18) 1943

Treatment of Sciatica: An Essay in Debunking. A. Hurst.—p. 773.
Effect of Pregnancy and Parturition on Pulmonary Tuberculosis. R. C. Cohen.—p. 775.
Differential Diagnosis of Chronic Sciatic Pain: Note with a Short Analysis of 100 Recent Cases. W. P. U. Jackson.—p. 776.
*Thymectomy for Myasthenia Gravis. M. Nellen.—p. 778.
Effect of Chemotherapy on Mortality from Pneumonia in Glasgow. T. Anderson.—p. 779.

Thymectomy for Myasthenia Gravis.—Nellen reports the case of a nurse, aged 23, who had myasthenia gravis. She responded to treatment with neostigmine, but her requirements rose so that after two months she needed 225 Gm. daily. Removal of a part of the thymus effected a slight improvement, but because her condition deteriorated again in spite of neostigmine treatment the remaining thymus was removed. Neostigmine medication had to be continued for a number of weeks after the operation, but gradually she needed less and less and finally felt strong without it.

Lancet, London

2:721-752 (Dec. 11) 1943

Health of Factory Worker in Wartime. S. A. Henry.—p. 721.
Infected Burns and Surface Wounds: Value of Penicillin. D. C. Bodenham.—p. 725.
Modern (Nonvolatile) Anesthesia: Observations on 1,000 Cases. F. B. Mallinson.—p. 729.
Lobar Pneumonia Treated with Sulfamethazine and Sulfadiazine. T. N. Morgan and R. Wylie-Smith.—p. 731.

Medical Journal of Australia, Sydney

2:433-452 (Nov. 27) 1943

Studies in Deposition of Lead in Bone: II. Calcium-Phosphorus and Lead-Phosphorus Ratios. F. R. Barrett.—p. 433.
Syndrome of Appendicitis, with Special Reference to Absence of Signs in Right Iliac Fossa. C. Craig.—p. 435.
*Mycotic Ear Infections at an Advanced Allied Base. E. L. Davis.—p. 437.
Method of Treatment of "Tropical Ear." H. Earnshaw.—p. 438.

Mycotic Ear Infections.—According to Davis, fungous infection of the external auditory canal is a fairly prevalent condition in tropical regions. He reports observations on 22 patients who were examined and treated during June and July 1943. Three stages of this disorder can be observed. In the first stage the ear feels sore and tender to the touch; chewing may be painful. The auditory canal often contains soft semifluid wax and débris of flecks of a white foamy substance. This stage was not seen in this series of cases, since the soldier usually presents himself in stage 2 or stage 3. In the second stage, which was seen in 16 of the patients, the ear is tender and chewing is painful. The canal is coated and sometimes completely blocked with soft, moist, sebaceous-like detritus, often with a greenish tinge due to a secondary infection with Bacillus pyocyaneus. After the ear has been syringed the canal wall is found to be red, with excoriation of the epithelial lining. The drum is not commonly affected. In the third stage the canal is swollen, often obliterated and very painful. The pain is worse at night. Sometimes when the swelling subsides an otitis media is revealed. All patients had a moderate pyrexia. In the initial stages the ear was syringed and swabbed with alcohol to dry out the canal. Glycerin and ichthammol (10 per cent) tampons were inserted. Subsequently the canals were swabbed with alcohol once a day and painted with carbol fuchsin. When the canals were still "moist" after treatment with carbol fuchsin, sulfathiazole powder was insufflated and the condition rapidly dried up. The six patients in the stage 3 category were admitted to the hospital. Apart from routine treatment, analgesics were given and heat was constantly applied by hot water bags. The average duration of treatment was seven days for cure. In eleven of the specimens submitted for pathologic examination, a fine mycelium was identified (trichophyton). A number of the patients had coexistent mycotic skin disease. Transmission of the infection to the ear may have occurred by towels.

Praxis, Bern

32:189-206 (March 11) 1943

Treatment of Pyodermas with Sulfonamides. H. Fuchs.—p. 189.
*Role of Sugar in Physical Exertion. R. M. Du Pan.—p. 196.

Role of Sugar in Physical Exertion.—Du Pan studied the role of sugar in physical effort during eighteen months in military service. In subjects who are in a normal status of training the sugar reserves are sufficiently great to permit exertion of long duration without the blood sugar going greatly below normal. He mentions several investigations, which show, on the one hand, the uselessness of "doping" with sugar during violent but short exertion and, on the other, the role of foods high in carbohydrates during the days preceding an effort of long duration. The physician can recommend to his patient foods rich in starches on the day preceding great exertion in order to permit the formation of sugar stores in the body. He should advise against excessive consumption of meats, commonly believed excellent during great exertion, because meat is chiefly composed of proteins, which, while giving a feeling of vigor, have a weak calorific power and produce wastes which impede the circulation and augment uremia.

Archivos Argentinos de Pediatría, Buenos Aires

14:263-350 (Oct.) 1943

*Infantile Encephalitis in City of Cordoba (Argentina). J. M. Valdes.—p. 263.
Pathologic Anatomy of Epidemic Encephalitis Observed in the City of Cordoba. A. Ferraris.—p. 329.

Infantile Encephalitis in Argentina.—In the autumn and summer of 1940 and 1941 an epidemic of meningoencephalomyelitis occurred in Cordoba, Argentina. Although isolated cases had previously been observed, it was the first epidemic of encephalitis to be recognized in Argentina. Eighty cases were observed by Valdes in the University Hospital. The incidence was higher in infants and young children. Clinical features were variable. As a rule, the onset of the disease was acute, characterized by high fever, headaches, convulsions, delirium, unconsciousness, agitation, meningeal signs and coma. In many cases the onset of sensory and motor disturbances was preceded by or associated with gastrointestinal symptoms, such as diarrhea, vomiting and abdominal pain. Especially in infants the gastrointestinal symptoms often overshadowed the nervous disturbances, misleading the diagnosis. Spinal fluid examination in these cases was decisive. In 13 cases the initial symptoms were less sudden and severe, and manifestations referable to the nervous system developed more slowly. A most striking sign of the disease was profound coma associated with sensory and motor abnormalities. Paralyses were usually of short duration and irregular distribution. Bulbar and cerebellar involvement were the rule with convulsions, athetosis, palatal and facial paralysis and terminal respiratory paralysis. Tendon reflexes were sometimes unobtainable, often accentuated. Abdominal reflexes were, as a rule, absent. Cerebrospinal fluid changes were invariably present in the first days of the disease, being characterized by lymphocytosis, high total protein content and positive Pandy test. The prognosis of the disease was very poor. Of 67 patients acutely ill 40 per cent died and 16 per cent displayed severe sequelae such as hydrocephalus, epilepsy and mental deterioration. In the whole group only 44 per cent appeared to have recovered completely without after-effects. Postmortem examination revealed venous congestion and edema of the brain, nonpurulent subcortical focal encephalitis with lymphocytic perivascular infiltration and extensive glial proliferation. There were also acute passive congestion and toxic changes in the liver, spleen, kidney and gastrointestinal tract. Bacteriologic tests, inoculation of the spinal fluid of guinea pigs, blood cultures and cultures of the spinal cord and the brain all yielded negative results. Neutralization tests with convalescent serums were negative for virus of the Japanese type B, equine encephalomyelitis of the eastern, western and Argentine (Rosenbusch) strain as well as for the St. Louis virus. The disease could be transmitted by inoculation of brain emulsion into white mice and was then transmissible from mouse to mouse. The pathogenic agent was a filtrable virus. The epidemic outbreak in human beings occurred simultaneously with a very severe epizootic among horses and was followed by an identical epizootic in fowls.

Book Notices

Principles and Practice of Rehabilitation. By John Eisele Davis, M.A., Sc.D. Cloth. Price, $3. Pp. 211, with 8 illustrations. New York: A. S. Barnes & Company, Inc., 1943.

With the increasing interest in rehabilitation, a short textbook on the subject should have a large reading demand. Most of the current thought of rehabilitation is concerned with the reconditioning of World War II veterans. Neuropsychiatric causes constitute the largest number of medical discharges of soldiers and sailors at present. Dr. Davis carefully reviews the different psychiatric entities commonly found among veterans of World Wars I and II. A chapter on the psychologic approach of mental disease and another chapter on the theories of reeducation provide an excellent back drop for the second half of the book, which discusses psychotherapy.

A general review of many aspects of psychotherapy are given in the last four chapters. The use of occupational therapy, music, drama and education are given in outline. Suggested programs and board aims of many workers in these fields are given. It is regretted that the author did not give the results of his own experience at the Veterans Administration Facility but relied to so large an extent on the results of others.

Mention is not made of the rehabilitation of diseases and injuries other than neuropsychiatric entities. In avoiding the large fields of reconditioning battle casualties, tropical diseases, postoperative surgery and infectious diseases Dr. Davis might well have limited the title of his book to "Principles and Practice of Rehabilitation of Neuropsychiatric Entities." On the whole the book is well written and informative, and it should be of value to those engaged in the reconditioning of neuropsychiatric patients.

Micrurgical and Germ-Free Techniques . . . Their Application to Experimental Biology and Medicine . . . A Symposium. Edited by James A. Reyniers, The Laboratories of Bacteriology, University of Notre Dame, Notre Dame, Indiana. Fabrikoid. Price, $5. Pp. 274, with 94 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, 1943.

This book, in two sections, is a collection of the papers read in a symposium held at Notre Dame in November 1939 to present in concise form the latest information in two specialized fields. The first section is on the science and practice of microdissection and microinjection with chapters devoted to the design of machines for use in bacteriology, the application of surface chemistry to the study of living cells and the application of micrurgy to botany, with special reference to phytopathology. The second section, devoted to germ free methods, takes up first the problem of isolation and the elimination of contamination, describing in detail the development of the machines for rearing and working with germ free animals, with a description of the technics employed, using a variety of animals and fowl. One chapter is devoted to the use of the mammalian fetus as an experimental animal in bacteriology, virology and immunology, with the technic employed, describing the limitations and certain results obtained. One chapter is devoted to the germ free culture of certain invertebrates and describes several technics as used for protozoa, nematodes and insects. Another chapter considers the application of such germ free methods to botany, with particular emphasis on its application in the study of the physiology and pathology of higher plants, where "aseptic technic is highly desirable if not absolutely essential." The last chapters are devoted to the control in nurseries of cross infections transmitted by way of the air. A variety of mechanical and ultraviolet radiation barriers are described and are used in combination with air conditioning installations for adequate ventilation. Bacteriologic studies showing comparative results for various types of barriers both with and without air conditioning are given. These cover both the general bacterial level under given conditions of occupancy and the transmission of bacteria from a given point of dissemination to all parts of the nursery. All studies are bacteriologic, and no clinical observations are recorded. In addition to the concise presentation of some particular phase of the subject, each chapter closes with a bibliography. For any one interested in these special fields, this book should prove valuable both for the subject matter and for the bibliographies.

Endocrine Disorders in Childhood and Adolescence. By H. S. Le Marquand, M.D., M.R.C.P., Physician, Royal Berkshire Hospital, London, and F. H. W. Tozer, M.D., M.R.C.P., Sometime Clinical Assistant, Royal Berkshire Hospital. Cloth. Price, 15s. Pp. 298, with 49 illustrations. London: Hodder and Stoughton, Limited, 1943.

Endocrinology is a much disputed topic; most books on this subject present at least a few ideas which will be hotly contested. This publication is no exception. Nevertheless for a small volume it offers interesting reading and should elicit some sound practical treatments by those who will apply endocrine preparations intelligently. In the United States the present edition will not displace other well known works, but it will be a useful addition to the libraries of teachers and others who follow closely published literature as it provides a list of commercial sex hormone preparations sold in England. Since many journals do not have a policy demanding that the official, chemical or common name be included to identify a drug which may be mentioned in a communication, the reader is often at a loss to know whether such names as Erugon, Polyansyn, Lutocyclin and Aristostab are androsterone, anterior pituitary, corpus luteum or gonadotropic preparations. This book will provide also useful information on the treatment of endocrine disorders in children.

The Arthropathies: A Handbook of Roentgen Diagnosis. By Alfred A. de Lorimier, A.B., M.A., M.D., Colonel, Medical Corps, United States Army. Cloth. Price, $5.50. Pp. 319, with 678 illustrations. Chicago: Year Book Publishers, Inc., 1943.

With emphasis on a visual presentation, Colonel de Lorimier carefully and systematically leads the reader through the impressively large field which comprises the arthropathies. These he divides etiologically into closely related groups, such as those associated with stress, the osteoarthropathies, or a second, the true arthritides, due to protein reactions, toxins or bacterial invasion. Chapters are expanded only moderately beyond outline form, yet all essential points seem to be presented and clearly stated. Through use of eye catching subdivisions and a uniformity of presentation in each chapter, salient features between any two or a group of lesions are easily compared without need of extended reading. Each brief chapter, covering an arthropathy, begins with a list of synonyms; then follow the roentgen criteria both in early and in later stages with—importantly—attention being drawn to early soft tissue reactions which may give a clue to diagnosis before any bone changes become visible. Next come the corroborative roentgen findings, concise statements on incidence, age, sex, sites of usual involvement, finally statements as to history, accompanying physical findings, clinical course, even the laboratory findings when significant. The bibliography at each chapter end is well selected and adequate. There is an abundance of well selected and uniformly good illustrations selected not only from the writer's own large teaching collection but also from those of his associates and colleagues throughout the country. These are presented in their much more satisfactory form as reproductions of negatives rather than positives. Helpful placement of numerous arrows shows the diagnostic roentgen findings in each case, though the excessive length and tortuosity of the arrows somewhat offend the eye and mar the films.

Man in the Air: The Effects of Flying on the Human Body. By Herbert S. Zim. Cloth. Price, $3. Pp. 332, with drawings by James MacDonald and photographs. New York: Harcourt, Brace and Company, 1943.

This is an excellent presentation of the topic of aviation physiology broadly interpreted. The writing is directed to the nontechnical reader, but the author is eminently successful in presenting the results of modern research and new technological developments in such a lucid manner that no intelligent reader need feel completely baffled. The book consists of twenty-two chapters and has over three hundred pages, but good typography and many illustrations in the text contribute to its readability. There are over fifty full page reproductions of photographs, which are in general well selected and are accordingly valuable additions to the text. Drawings and diagrams are used extensively. The author commences his book with short chapters on the atmosphere and on bodily functions. Chapters follow in which the problems of temperature and aeroembolism are discussed and modern protective devices are described. The effects of high acceleration are described, and the special functions of

eyes and ears are outlined in some detail. Airsickness, fatigue and some of the modern testing and classification procedures are also discussed. The public health aspect of aviation receives rather hasty consideration. The volume can be commended as a clear, comprehensive and interesting presentation of aviation medicine for an extremely wide reading public.

La neumonia por hidrocarburos del tipo del kerosene y la bencina. Por Juan Francisco Cassinelli. Paper. Pp. 46, with 15 illustrations. Montevideo: Editorial médica J. García Morales, 1943.

Contrasting with the extensive literature on chronic poisoning by benzene and allied substances, the contributions today available concerning the immediate effects of these compounds amount to no more than six or eight papers. The author, collaborating with other physicians in Uruguay, has studied the subject both clinically, mostly in children, and experimentally on rabbits. The most important lesions following the ingestion of kerosene or benzene are found in the lungs where pneumonias develop by arrival of the chemical through the trachea, by selective elimination from the blood stream or by both mechanisms. X-ray films taken serially every two or three hours after ingestion disclose a typical picture noticeable between eight and ten hours after the time when the toxic substance was ingested. The other clinical symptoms of the intoxication are also carefully studied, and previous contributions by Waring (1933), Nun and Martín (1934) and others are given due credit. The correctness of the terminology used in this and analogous conditions such as lipoid pneumonia and hydrocarbon pneumonia is discussed and a new classification is suggested. Fifteen illustrations and nineteen references are appended.

El hospital en Colombia. Compilación de las labores del primer Congreso hospitalario de Colombia, hecha por el doctor José Antonio Jácome Valderrama. Paper. Pp. 250. Bucaramanga: Imprenta del Departamento, 1942.

This is a compilation by Dr. Jácome Valderrama of the papers presented at the first Colombian Congress on Hospitalization, held at the city of Bucaramanga, Colombia. Despite the nature of the book, one finds in it data that may be of some interest for those who follow the progress being made in Latin American countries in matters of public health. Colombia, a country with about 8 million inhabitants, had 11,422 beds in 1937. The figure rose to 16,322 in 1942, while forty-six hospitals with a total of 1,500 beds are now under construction. These data are certainly encouraging, but it is still more encouraging to learn what was planned in the congress, which, if fulfilled, will thoroughly solve the problem of hospitalization of the indigent or people of slender means in that republic. The influence of the United States in the plans is patent, and examples from hospital organization in this country were frequently brought up by the speakers. The examples given by the Spaniards were not forgotten, and the audience was reminded of such interesting facts as the foundation of the first hospital in Mexico thirty years after the discovery of America and almost simultaneously with the conquest of Mexico by Cortes.

Medical Genetics and Eugenics. Volume 2. By R. Ruggles Gates, Ph.D., D.Sc., LL.D., Laurence H. Snyder, B.S., M.S., Sc.D., Professor of Medical Genetics, the Ohio State University, Columbus, and Earnest A. Hooton, Ph.D., Sc.D. Cloth. Pp. 60, with 13 illustrations. Philadelphia: Woman's Medical College of Pennsylvania, 1943.

This little book presents the text of three lectures delivered by the authors in a series on medical genetics sponsored by the Woman's Medical College of Pennsylvania. The most important contribution is the lecture by Snyder on "Heredity and Modern Life." The author, in crisp and concise style and with the use of apt illustrative examples, sets forth the present status of our knowledge of human heredity and its applications in medical practice. Thoroughly familiar with the field, he summarizes clearly the large body of exact data at hand and, what is more important, the variety of technics, statistical and clinical, developed for advancing the frontiers in this field. While emphasizing the inherent difficulties involved in the study of human heredity, he outlines the practical methods now being used to overcome these difficulties. He evaluates a knowledge of human heredity in early and correct diagnosis, in preventive therapeutics, in medicolegal cases, in advice in prospective marriages and pregnancies, in establishing sound eugenic programs and through studies in linkage in the prediction of latent pathologic conditions in individual cases. The author discusses the human mutant gene in its position in the chromosome complex and the consequent nature of its transmission, in its physiologic and ontogenetic relations, the percentage and degree of its expression and dominance, and, in its phylogenetic relations, the frequency of its alleles in human populations. Dr. Gates discusses man's evolutionary past and poses the unsolved problems of human phylogeny. He presents some interesting, though somewhat uncritical, data on human race crossing. He gives examples and outlines the mode of inheritance of structural and functional abnormalities in man. Emphasis is placed on the study of monozygotic twins in establishing the role of heredity in pathology. Hooton, apparently ignorant of the genetic technics already employed and the body of human genetic knowledge at hand, writes in vague generalities of the importance of heredity in contrast to environment. He rather naively minimizes research in theoretical genetics and proposes an immediate all-out attack on the human genetic fortress. He seems not to understand that every weapon to be used has been forged and tested by researches on plants and other animals. But the reviewer would agree with him that a properly staffed institute of human heredity would form a valuable addition to some of our larger medical centers.

The Development of Anesthesia. By Thomas E. Keys, A.B., M.A., Reference Librarian, Mayo Clinic, Rochester, Minnesota. Paper. Pp. 78, with 36 illustrations. Reprinted from Anesthesiology 2: 562-574 (Sept.) 1941, 3: 11-23 (Jan.), 282-294 (May), 650-658 (Nov.) 1942 and 4: 409-429 (July) 1943.

This monograph represents much research. It is well written and well illustrated. It is particularly valuable for its description of the more recent developments of anesthesia. Unfortunately, most writers on the history of anesthesia have been mainly concerned with boosting the claims of Wells, Long or Morton. It is a pleasure therefore to find some one who has no favorite son to eulogize and who is particularly concerned with mapping the development of modern anesthesia with its new gases, its new masks and mixing chambers, its new agents for local blocking and its even newer substances for intravenous use. There is information about the development of spinal and sacral anesthesia and the new continuous sacral anesthesia. It is gratifying to find considerable information about H. H. Hickman, who in 1824 did excellent work on animals and who, if he had only received support from surgeons, might have worked out anesthesia twenty-two years before Morton succeeded. He had to suffer the fate of most men who have ideas too novel for their fellows at the time. There is an excellent bibliography which no teacher of anesthesia can afford to be without. Mr. Keys is to be congratulated on this fine and useful piece of work.

The Business of Getting Well. By Marshall Sprague. Cloth. Price, $1.75. Pp. 143, with illustrations by Ervine Metzl. New York: Thomas Y. Crowell Company, 1943.

This book is the practical application of a sense of humor to the dreary business of recovering during and after a prolonged illness in the hospital and at home. Although the book is lightly and often flippantly written, it is nevertheless packed with sensible suggestions and excellent philosophy. It contains chapters on how to be an invalid, what not to think about and pertinent incisive but good humored information about hospitals and hospital personnel. It contains some straight-from-the-shoulder advice for relatives. It should be excellent reading for the discontented convalescent. It should be required reading for hospital personnel, especially the chapter on the theoretical rest hour in the hospital, into which all the day's most noisy activities seem to be compressed. Physicians can recommend this book with confidence.

Evolución y función biológica de las proteínas. Por Julio Mendez, médico del Hospital J. M. Ramos Mejía. Paper. Pp. 139. Buenos Aires: Guillermo Kraft, Ltda., Soc. Anon. de Impresiones Generales, 1943.

From what is classically known and from the recent advances on protein chemistry, the author selects those contributions that best support his highly speculative theories on several subjects, especially a rather revolutionary Argentine theory on immunity postulated since 1916. The content of the book was the subject of a series of six lectures delivered at the University of Buenos Aires.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

THE HYPOTHALAMUS AND MENTAL BEHAVIOR

To the Editor:—**During recent years there has been an increasing tendency to emphasize the role of the hypothalamus in mental disease, especially in schizophrenia. Many experiments have been conducted trying to prove vital changes in behavior, attitude, physiologic reactions and the like in various animals after artificially induced hypothalamic lesions. Yet, to my knowledge, there is no experimental proof in man. In spite of this, some authors take it for granted that hypothetical hypothalamic disturbances may cause or accompany mental diseases in man; these authors endeavor to localize some forms of schizophrenia in the hypothalamus, asserting that they have found certain well defined centers in that region, e. g. for affecting reactions, for vasoconstriction and for sexual impulses. Among others one finds the statement that a strong shivering response on exposure to mild cold points to an irritation of the vasoconstrictor mechanism in the hypothalamus, an "irritation reaction" never seen in schizophrenia. Regardless of the pending controversies, I should like to know whether or not these theories, drawn from experiments with animals, can be fully applied to man—in other words, is there any final and generally accepted proof that either normal or pathologic mental behavior in man is governed by the hypothalamus?** **M.D., North Dakota.**

ANSWER.—There is considerable evidence that both normal and pathologic mental behavior in man may be governed by the hypothalamus. This is based on clinicopathologic studies and observations made at operation. These are naturally not quite as precise, as B. J. Alpers (Personality and Emotional Disorders Associated with Hypothalamic Lesions, *A. Research Nerv. & Ment. Dis., Proc.* **20**:725, 1940) points out, as the data from animal experimental observations. The most conclusive reports are those on abnormal emotional responses seen when regions in or near the hypothalamic region are stimulated by the surgeon at operation.

The hypothalamic nuclei, lying between the pituitary body and the thalamus, on the floor of the third ventricle, are known to be the principal centers in the forebrain for the integration of visceral functions involving the autonomic nervous system. They appear to coordinate impulses going out to nuclei of the brain stem and spinal cord, these nuclei in turn controlling the peripheral mechanisms of the autonomic system. The hypothalamic nuclei have elaborate connections with other structures in the forebrain, especially the thalamic nuclear masses, relay stations for all sensory impulses entering the brain except smell, and the cerebral cortex, dominating the entire structure. In this complicated system the hypothalamic nuclei regulates sexual activity, water, fat and carbohydrate metabolism, heat adjustment, cardiac rate, blood pressure, peristalsis and some other functions (Fulton, J. F.: Physiology of the Nervous System, ed. 2, New York, Oxford University Press, 1943).

Dysfunction of the hypothalamic nuclear region results in certain clinical syndromes, such as hyperthermia, diabetes insipidus and emaciation, Fröhlich's disease, hypersomnia and autonomic epilepsy. By clinicopathologic correlations many data regarding these syndromes have accumulated, including some important observations on personality changes and evidence of affective disturbances in man.

The chief findings at operations have been manic responses. Foerster and Gagel (Ein Fall von Ependymcyste des III Ventrikels: Ein Beitrag zur Frage der Beziehungen psychischer Störungen zum Hirnstamm, *Ztschr. f. d. ges. Neurol. u. Psychiat.* **149**:312, 1933), when manipulating a suprasellar craniopharyngioma which compressed the floor of the third ventricle, noted that mania developed as soon as traction was exerted on the hypothalamic region. The patient burst forth in a push of speech, quoting passages in Latin, Greek and Hebrew, exhibited sound associations and broke into a flight of ideas with every word spoken by the operator. From this experience and others of a similar nature, Foerster believes that mechanical stimulation of the anterior part of the floor of the third ventricle produces a definite mental syndrome having the characteristics of a manic reaction. Harvey Cushing (Papers Relating to the Pituitary Body and the Hypothalamus and Parasympathetic Nervous System, Springfield, Ill., Charles C Thomas, 1932), J. F. Fulton and Percival Bailey (Tumors in the Region of the Third Ventricle: Their Diagnosis and Relation to Pathological Sleep, *J. Nerv. & Ment. Dis.* **69**:1 [Jan.], 145 [Feb.], 261 [March] 1929) and others have observed similar reactions, but the responses appear to be by no means constant, and hallucinations have been noted by Norman M. Dott (in Clark's The Hypothalamus, Morphological, Functional, Clinical and Surgical Aspects, Edinburgh, Oliver & Boyd, 1938), with delusional dementia. Roy R. Grinker (Hypothalamic Functions in Psychosomatic Interrelations, *Psychosom. Med.* **1**:19 [Jan.] 1939), in an ingenious manner, stimulated the hypothalamus in man and caused, in addition to the autonomic effects on blood pressure, a feeling of profound anxiety and protracted sobbing. J. C. White (Autonomic Discharge from Stimulation of the Hypothalamus in Man, *A. Research Nerv. & Ment. Dis., Proc.* **20**:854, 1940), operating under local anesthesia in 5 cases, stimulated the paraventricular nuclei electrically but produced only an abrupt acceleration of the heart and a rise in blood pressure. When the anterior hypothalamus was stimulated bradycardia developed, and the patients became drowsy or even comatose. Psychic reactions were not noted.

In spite of White's observations, Foerster's cases are striking and, when his results are combined with the clinicopathologic correlations of other investigators, one is led to believe that the hypothalamus is immediately concerned in various emotional and personality disorders. Localization to a single nucleus or a group of nuclei of special functions at the present time cannot be stated with any degree of certainty.

Stanley Cobb (Borderlands of Psychiatry, Cambridge, Mass., Harvard University Press, 1943) feels that the clinical evidence is interesting but not convincing, noting that the experiments on man are not sufficiently controlled. He is more influenced by J. H. Masserman (The Hypothalamus in Psychiatry, *Am. J. Psychiat.* **98**:633 [March] 1942), who has reviewed the subject and done animal experiments, than by Foerster, Cushing and Bailey, surgeons who actually observed the manic reactions at operation. Cobb concludes that the hypothalamus "is a motor way-station where emotional expression is integrated into behavior patterns on its way out to the muscles and glands. Feeling, the essence of emotion, must take place elsewhere."

The query, therefore, if "final and generally accepted proof" is insisted on, must be answered in the negative. It can be stated, however, that considerable evidence now exists in the literature to suggest a close relationship between the hypothalamic nuclei and emotions, or at least the behavioristic component of the emotions. One is not yet ready to accept as a proved fact that a change in "feeling tone" has ever been observed as the result of hypothalamic stimulation. Whatever psychic changes have been noted are more closely allied, moreover, to manic depressive psychosis than to schizophrenia.

ATROPHIC RHINITIS

To the Editor:—**I wish to know whether anything new is in use in the treatment of the intractable cases of atrophic rhinitis. I have been using irrigations and estrogenic substances both locally and generally but in some cases can see no results.** **Carl M. Cowin, M.D., Hollywood, Calif.**

ANSWER.—A series of researches has been undertaken in recent months on the effect of implants of estrogenic substances, but the results have not justified the use of such measures.

A review of the literature of the treatment of atrophic rhinitis reveals that most rhinologists adhere to the fundamental principles of general and local treatment. The former deals with the care of the general health, the inculcation of improved hygiene, good food of a balanced vitamin-mineral intake with sufficient calories for any given case, the avoidance of dust, alcohol and tobacco, proper humidification of the air, and the correction of any metabolic, endocrine or visceral faults that may be found after a careful clinical survey is made. Appropriate tonic therapy for any blood deficiency and the question of a change of climate (seaside) may have to be added to the general regimen.

The local measures are many, and the best results are obtained when they are varied from time to time. They consist in cleansing the nasal fossae of crusts and secretions and stimulating the mucosa to function better.

The patient carries out the cleansing at home as follows: 1. The nose is douched once or twice daily with at least 1 pint (500 cc.) of isotonic solution of sodium chloride. Occasionally 1 teaspoon of sodium bicarbonate may be added. At other times 1 or 2 tablespoons of sugar may be placed in the pint of water. The solution should always be tepid and comfortable, and the patient should be instructed in the proper technic of douching in order to avoid ear complications. 2. Prescriptions of Mandl's pigment or 25 per cent dextrose in pure glycerin should be given to the patient with detailed instruction to apply these solutions with a cotton tipped applicator thoroughly to the mucous membrane four or five times daily and after any nasal douching.

The office treatment will consist in nasal irrigation of warm isotonic solution of sodium chloride, the solution being changed at times by substituting half strength Dobell's solution or full strength Seiler's solution. Following this the nose is packed with 10 per cent aqueous ichthammol, holding the latter for thirty minutes. The patient then blows the nose gently, at

which time the crusts may be removed with cotton tipped probes. A little irrigation may again be necessary to remove the more adherent crusts. The mucosa is now thoroughly massaged with Mandl's pigment and the treatment is finished with a liberal spraying of warm camphor, menthol and petrolatum solution. As an alternative to Mandl's pigment (iodine 0.3, potassium iodide 0.6, glycerin to make 30), since it is best to rotate the various paints, Peruvian balsam may be used. Other solutions that may be painted or massaged into the mucosa are olive oil, thymol 1:10,000, resorcinol 1:200, phenyl salicylate 1:1,000 and sanitas fluid 1:50.

When ozena is present a spray of solution of formaldehyde U. S. P. diluted 1:100 preceded by cocainization is often effective, as is the massage of "scarlet red emulsion" at the conclusion of a treatment.

Nasal packing for thirty minutes with simple syrup followed by irrigation with isotonic solution of sodium chloride is another line of therapy, while painting the nasal mucosa with a 1 part of zinc chloride to 30 parts of glycerin following nasal irrigation is another approach. Cotton plugs saturated with isotonic solution of sodium chloride are inserted into the nose sufficiently large to obstruct half of the lumen of the nostril and kept in situ for several hours or strips of ribbon gauze medicated with iodoform, sanitas, ichthammol or boric acid and wrung out of sterile water will be found of value.

All these measures indicate that a short course of cleansing, painting and packing should be meticulously carried out in the office several times a year while the patient continues to carry out his instructions at home.

Vaccine therapy has not proved successful. The several operative procedures that are known at the present time are paraffin injections, ivory implantation, the Lautenschlager operation and the Halle operation.

TESTING FOR SCHIZOPHRENIA

To the Editor:—**Is there any connection between the Bárány test and schizophrenia? Is a negative Bárány test typical for schizophrenia? If not, does a negative result merely point to an organic base for the projection mechanism in schizophrenia? Where would you locate the seat of this projection mechanism, if any? In clinical psychiatry can the association test be regarded as a valuable help in the differential diagnosis of schizophrenia, psychoneurosis and manic-depressive psychosis? In a questionable case can one rely on this test for final diagnosis? Do you think that this test should play a major or decisive role in securing the proper diagnosis?**

M.D., North Dakota.

ANSWER.—There is no definite relation between the Bárány test and schizophrenia. However, some authors have described postural reflex changes to body rotation as characteristically altered in some schizophrenic patients (Schilder, Paul: Mind: Perception and Thought in Their Constructive Aspects, New York, Columbia University Press, 1942).

The association test is a useful psychologic test in clinical psychiatry. The differential diagnosis of schizophrenia, psychoneurosis and manic depressive psychosis is best made on the basis of the history, the complete neuropsychiatric examination and careful evaluation of the psychodynamic factors. It would be advisable not to rely on the association test as the most important diagnostic aid.

Work on the basis of schizophrenic projection mechanisms has been done by many. The following references are recommended:

Association for Research in Nervous and Mental Disease: Vol. X, Schizophrenia, Baltimore, Williams & Wilkins Company, 1931.

Lewis, N. D. C.: Research in Dementia Praecox, New York, the National Committee for Mental Hygiene, 1936.

White, W. A.: The Language of Schizophrenia, *Arch. Neurol. & Psychiat.* **16:** 395 (Oct.) 1926.

Gillespie, R. D.: Clinical Differentiation of Psychogenic and Physiogenic Disorders, *Brain* **51:** 254 (June) 1928.

Malamud, William: Outlines of General Psychopathology, New York, W. W. Norton & Co., 1935.

Noyes, A. P.: Modern Clinical Psychiatry, Philadelphia, W. B. Saunders Company, 1940.

GROWING BREWERS' YEAST

To the Editor:—**Will you be so kind as to give me the formula for a culture medium suitable for growing brewers' yeast? Many of the culture mediums produce a product with a very foul smell. The culture mediums used by brewers produce a pleasant smelling product.**

James L. Crawford, M.D., Laredo, Texas.

ANSWER.—The best culture medium for growing brewers' yeast is brewers' wort, which may be prepared as follows: A corn mash is made by adding 240 Gm. of corn grits to 1,200 cc. of tapwater. Autoclave for one hour at 15 pounds, then cool to 70 C. Malt mash: Three hundred and sixty Gm. of ground barley malt is added to 2,000 cc. of water and held at 40 C. for one hour. It is then heated in a water bath to 70 C. and added to the corn mash. Continue heating at 69-72 C., with stirring, until all the starch has been converted, using hundredth normal iodine solution as indicator. Strain the liquid from the coarse mash through a cheesecloth and autoclave it for thirty minutes at 15 pounds. Filter through paper and cool to 45 C. (leave in refrigerator over night), then filter out the cold fraction precipitate. Adjust the specific gravity to 1.04 and the p_H to 5.3. Divide into flasks in appropriate quantities for storage and sterilize in autoclave. For plates or slants add 1.6 per cent agar to the wort.

If the wort is obtained at a brewery it should be drawn before the hops are added and should then be treated as mentioned after straining through cheesecloth.

Inoculate with about 3 Gm. of moist yeast per liter of wort and incubate at room temperature. The yeast crop will be greatly increased if a current of sterile air is passed through the culture during incubation.

EXTENSIVE TONSIL OPERATION

To the Editor:—**During a tonsillectomy all the mucous membrane was dissected from the base of the tongue between the circumvallate papillae and the base of the epiglottis and from one side of the pharynx to the other. I never heard of such a procedure. I should like an explanation and comments. Does it cure allergy and asthma? Is it fair to the patient to refer to this procedure as getting all the lymphoid tissue in the throat (this is impossible) or to say that the lingual tonsil is removed (this is ambiguous); the patient understands neither. The results are undesirable, as any one might anticipate. Should not this possibility, or certainty, and the fact that the operation is new and controversial be discussed with the patient before doing it? There is no question of a suit; the time for this has passed. Such happenings are far too common, and I think some publicity and warning would do good to the profession at large both as to the procedure and as to the description, which quite naturally deceived the patient.**

M.D., Ohio.

ANSWER.—This query is difficult to answer, as some of the facts cannot be verified and because the type of operative procedure described cannot be accurately identified. It may be said at the outset that no type of tonsil operation will cure asthma or other allergic states. The removal of diseased tonsils may improve the general physical condition of a patient suffering from those conditions, but no more could be anticipated.

There is an operation called expanded tonsillectomy which has been described in detail by Thomas R. French in Jackson and Coates's textbook on diseases of the ear, nose and throat. The procedure in question may not be the one advocated by French, but it may be useful to say a few words about the latter because of some resemblances between them. This operation aims not only to remove when necessary diseased faucial tonsils but developed lymphoid tissues below and between the two faucial tonsils. The extra tonsillar lymphoid tissues include what are commonly called the lingual tonsils and what French calls the lymphoid apron of the base of the tongue and behind the circumvallate papillae.

This operation, while not practiced widely, has been recommended by reliable specialists and accepted for description in a textbook edited by men of the highest standing.

If the procedure described in the query is the same as the so-called expanded tonsillectomy and was properly performed, there should have been no undue after-results. Of course the patient should have been informed that this was not the usual type of tonsillectomy. The fact that an operation is new, however, or not widely practiced, should not be held against it; it needs only to be done with discrimination and skill, and no improper claims are to be made for it.

UMBILICAL HERNIA IN INFANTS

To the Editor:—**In a recent article on the subject of umbilical hernia in infants, the statement is made that "the tongue and slot strapping has proved most effective and is the easiest type of strapping for a parent to apply successfully at home." I have always strapped these hernias with 2 or 3 inch width adhesive after invaginating the navel between lateral folds of tissue. If the "tongue and slot" procedure differs from this method I would appreciate learning the details.**

J. Pancoast Reath, M.D., St. Davids, Pa.

ANSWER.—The purpose of strapping umbilical hernias is, of course, to maintain constant reduction. Details as to how this can be done can hardly be given dogmatically. If simple strapping with 2 or 3 inch wide adhesive after invaginating the navel between folds of skin has given satisfaction in maintaining reduction, this may be continued by those who have obtained good results by this method. The writer's interpretation of the "tongue and slot" procedure is as follows: A segment of tongue depressor is placed vertically and on edge over the umbilical hernia and pressed downward. This brings the skin on each side together over the slotlike depression made by the invaginated segment of tongue depressor, and adhesive straps are applied to maintain the reduction.